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EMC Test Report

Application for Grant of Equipment Authorization

Industry Canada RSS-Gen Issue 4 / RSS 247 Issue 1
FCC Part 15, Subpart E

Model: XI-AC3470

IC CERTIFICATION #:	5428A-XIAC3470
FCC ID:	SK6-XIAC3470
APPLICANT:	Xirrus, Inc. 2101 Corporate Center Drive Thousand Oaks, CA 91320
TEST SITE(S):	National Technical Systems - Silicon Valley 41039 Boyce Road. Fremont, CA. 94538-2435
IC SITE REGISTRATION #:	2845B-3; 2845B-4, 2845B-5, 2845B-7
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ACCREDITED
Testing Cert #0214.26

REVISION HISTORY

Rev#	Date	Comments	Modified By
-	October 19, 2015	First release	
1.0	November 11, 2015	Updated model number Removed erroneous duty cycle information	MEH

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SCOPE

An electromagnetic emissions test has been performed on the Xirrus, Inc. model XI-AC3470, pursuant to the following rules:

Industry Canada RSS-Gen Issue 4
RSS 247 Issue 1 "Digital Transmission Systems (DTSs), Frequency Hopping Systems (FHSs) and Licence-Exempt Local Area Network (LE-LAN) Devices"
FCC Part 15, Subpart E requirements for UNII Devices

Conducted and radiated emissions data has been collected, reduced, and analyzed within this report in accordance with measurement guidelines set forth in the following reference standards and as outlined in National Technical Systems - Silicon Valley test procedures:

ANSI C63.10-2013
FCC General UNII Test Procedures KDB789033

The intentional radiator above has been tested in a simulated typical installation to demonstrate compliance with the relevant Industry Canada performance and procedural standards.

Final system data was gathered in a mode that tended to maximize emissions by varying orientation of EUT, orientation of power and I/O cabling, antenna search height, and antenna polarization.

Every practical effort was made to perform an impartial test using appropriate test equipment of known calibration. All pertinent factors have been applied to reach the determination of compliance.

OBJECTIVE

The primary objective of the manufacturer is compliance with the regulations outlined in the previous section.

Prior to marketing in the USA, all unlicensed transmitters and transceivers require certification. Receive-only devices operating between 30 MHz and 960 MHz are subject to either certification or a manufacturer's declaration of conformity, with all other receive-only devices exempt from the technical requirements.

Prior to marketing in Canada, Class I transmitters, receivers and transceivers require certification. Class II devices are required to meet the appropriate technical requirements but are exempt from certification requirements.

Certification is a procedure where the manufacturer submits test data and technical information to a certification body and receives a certificate or grant of equipment authorization upon successful completion of the certification body's review of the submitted documents. Once the equipment authorization has been obtained, the label

indicating compliance must be attached to all identical units, which are subsequently manufactured.

Maintenance of compliance is the responsibility of the manufacturer. Any modification of the product which may result in increased emissions should be checked to ensure compliance has been maintained (i.e., printed circuit board layout changes, different line filter, different power supply, harnessing or I/O cable changes, etc.).

STATEMENT OF COMPLIANCE

The tested sample of Xirrus, Inc. model XI-AC3470 complied with the requirements of the following regulations:

Industry Canada RSS-Gen Issue 4
RSS 247 Issue 1 "Digital Transmission Systems (DTSs), Frequency Hopping Systems (FHSs) and Licence-Exempt Local Area Network (LE-LAN) Devices"
FCC Part 15, Subpart E requirements for UNII Devices

Maintenance of compliance is the responsibility of the manufacturer. Any modifications to the product should be assessed to determine their potential impact on the compliance status of the device with respect to the standards detailed in this test report.

The test results recorded herein are based on a single type test of Xirrus, Inc. model XI-AC3470 and therefore apply only to the tested sample. The sample was selected and prepared by Paul Zahra of Xirrus, Inc..

DEVIATIONS FROM THE STANDARDS

No deviations were made from the published requirements listed in the scope of this report.

TEST RESULTS SUMMARY

UNII / LELAN DEVICES

Operation in the 5.15 – 5.25 GHz Band (FCC ONLY)

FCC Rule Part	RSS Rule Part	Description	Measured Value / Comments	Limit / Requirement	Result
15.407 (a) (1) (ii)	-	Output Power	a: 23.7 dBm (0.234W) HT20: 23.9 dBm (0.243W) HT40: 23.0 dBm (0.199W) AC80: 16.9 dBm (0.050W) (Max eirp: 2.272 W)	30dBm	Complies
15.407 (a) (1) (ii)	-	Power Spectral Density	a: 11.4 dBm/MHz HT20: 11.3 dBm/MHz HT40: 7.2 dBm/MHz AC80: -1.5 dBm/MHz	17 dBm/MHz	Complies

Operation in the 5.15 – 5.25 GHz Band (IC ONLY)

FCC Rule Part	RSS Rule Part	Description	Measured Value / Comments	Limit / Requirement	Result
-	RSS 247 6.2.1	Indoor operation only	Refer to user's manual	N/A	Complies
-	RSS 247 6.2.1 (1)	99% Bandwidth	a: 16.9 MHz HT20: 18.1 MHz HT40: 36.4 MHz AC80: 75.2 MHz	N/A – limits output power is <20 MHz	N/A
-	RSS 247 6.2.1 (1)	Output Power	a: 16.4 dBm eirp (18 mW) cond. HT20: 16.6 dBm eirp (19 mW) HT40: 19.7 dBm eirp (38 mW) AC80: 20.8 dBm eirp (49 mW) (Max eirp: 0.044 W)	23dBm eirp	Complies
-	RSS 247 6.2.1 (1)	Power Spectral Density	a: 0.0 dBm/MHz HT20: 0.0 dBm/MHz HT40: 0.0 dBm/MHz AC80: 0.7 dBm/MHz	10 dBm/MHz eirp	Complies

Operation in the 5.725 – 5.850 GHz Band (4Tx)

FCC Rule Part	RSS Rule Part	Description	Measured Value / Comments	Limit / Requirement	Result (margin)
-	RSS 247 6.2.4 (1)	6dB Bandwidth	a: 16.3 MHz n20: 17.5 MHz n40: 36.3 MHz ac80: 76.3 MHz	>500kHz	N/A
15.407(a) (3)	RSS 247 6.2.4 (1)	Output Power	a: 25.0 dBm (0.314W) HT20: 22.9 dBm (0.194W) HT40: 21.9 dBm (0.157W) AC80: 17.2 dBm (0.052W) (Max eirp: ?? W)	24 dBm / 250mW (eirp < 30dBm)	Complies
15.407(a) (3)	RSS 247 6.2.4 (1)	Power Spectral Density	a: 12.5 dBm/MHz HT20: 10.1 dBm/MHz HT40: 6.2 dBm/MHz AC80: -1.5 dBm/MHz	30 dBm/500kHz	Complies
-	RSP 100 RSS GEN 6.6	Occupied Bandwidth	a: 19.1 MHz n20: 18.5 MHz n40: 36.7 MHz ac80: 75.9 MHz	Information only	N/A

Requirements for all U-NII/LELAN bands

FCC Rule Part	RSS Rule Part	Description	Measured Value / Comments	Limit / Requirement	Result
15.407	RSS 247 6.1	Modulation	Digital Modulation is used	Digital modulation is required	Complies
15.407(b) / 15.209	RSS 247 6.0	Spurious Emissions	67.9 dBµV/m @ 5860.8 MHz (-0.4 dB)	Refer to page 22	Complies
-	RSS 247 6.4 (1)	Channel Selection	Spurious emissions tested at outermost channels in each band	Device was tested on the top, bottom and center channels in each band	N/A
15	-		Measurements on three channels in each band		
15.407 (c)	RSS 247 6.4 (2)	Operation in the absence of information to transmit	Operation is discontinued in the absence of information	Device shall automatically discontinue operation in the absence of information to transmit	Complies
15.407 (g)	-	Frequency Stability	Frequency stability is better than 20ppm	Signal shall remain within the allocated band	Complies

GENERAL REQUIREMENTS APPLICABLE TO ALL BANDS

FCC Rule Part	RSS Rule part	Description	Measured Value / Comments	Limit / Requirement	Result (margin)
15.203	-	RF Connector	Antennas are fixed to the module	Unique or integral antenna required	Complies
15.207	RSS GEN Table 3	AC Conducted Emissions	58.3 dBµV @ 0.285 MHz (-2.4 dB)	Refer to page 20	Complies
15.247 (b) (5) 15.407 (f)	RSS 102	RF Exposure Requirements	Refer to MPE calculations in separate exhibit, RSS 102 declaration and User Manual statements	Refer to OET 65, FCC Part 1 and RSS 102	Complies

MEASUREMENT UNCERTAINTIES

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level and were calculated in accordance with UKAS document LAB 34.

Measurement Type	Measurement Unit	Frequency Range	Expanded Uncertainty
RF power, conducted (power meter)	dBm	25 to 7000 MHz	± 0.52 dB
RF power, conducted (Spectrum analyzer)	dBm	25 to 7000 MHz	± 0.7 dB
Conducted emission of transmitter	dBm	25 to 26500 MHz	± 0.7 dB
Conducted emission of receiver	dBm	25 to 26500 MHz	± 0.7 dB
Radiated emission (substitution method)	dBm	25 to 26500 MHz	± 2.5 dB
Radiated emission (field strength)	dBµV/m	25 to 1000 MHz	± 3.6 dB
		1000 to 40000 MHz	± 6.0 dB
Conducted Emissions (AC Power)	dBµV	0.15 to 30 MHz	± 2.4 dB

EQUIPMENT UNDER TEST (EUT) DETAILS

GENERAL

The Xirrus, Inc. model XI-AC3470 is a 4x4 802.11abgn/ac module that is designed to be used in the Xirrus XR2000, XR4000 and XR6000 host systems. Since the host would be placed on a wall or ceiling mounted during operation, the EUT was treated as tabletop equipment. The host devices are powered from 802.3 PoE + Compliant power sources.

The sample was received on September 28, 2015 and tested on September 28, 29, 30, October 1, 7, 8, 9, and 19, 2015. The EUT consisted of the following component(s):

Company	Model	Description	Serial Number	FCC ID
Xirrus Inc	XIAC3470	802.11abgn/ac module	Refer to data	SK6-XIAC3470

OTHER EUT DETAILS

The following EUT details should be noted:
2.4GHz - supports 11b, 11g, HT20, HT40
5GHz - supports 11a, HT20, HT40, AC80 (does not support 80+80 or 160MHz at this time)
2.4/5GHz - supports 4Tx and 4TxBF

ANTENNA SYSTEM

The antenna system consists of four internal pcb trace antennas.

ENCLOSURE

The EUT has no enclosure. It is designed to be installed within the enclosure of a host system.

MODIFICATIONS

No modifications were made to the EUT during the time the product was at NTS Silicon Valley.

SUPPORT EQUIPMENT

The following equipment was used as support equipment for testing:

Company	Model	Description	Serial Number	FCC ID
Xirrus	XR4000	XR4000 motherboard/test fixture	-	-

The following equipment was used as remote support equipment for emissions testing:

Company	Model	Description	Serial Number	FCC ID
Xirrus	XP1-MSI-75	POE Injector	-	-
-	-	Laptop Computer	-	-

SUPPORT EQUIPMENT (AC Conducted Emissions)

The following equipment was used as support equipment for testing:

Company	Model	Description	Serial Number	FCC ID
Xirrus	XR4000	XR4000 motherboard/test fixture	-	-
Xirrus	XP1-MSI-75	POE Injector	-	-

The following equipment was used as remote support equipment for emissions testing:

Company	Model	Description	Serial Number	FCC ID
-	-	Laptop Computer	-	-

EUT INTERFACE PORTS

The I/O cabling configuration during testing was as follows:

Port	Connected To	Cable(s)		
		Description	Shielded or Unshielded	Length(m)
EUT	test fixture	PCIe bus connector	-	-
Test Fixture – POE In	Remote POE Injector	CAT5	Unshielded	10
POE Injector	Laptop Computer	CAT5	Unshielded	2
POE Injector AC Input	AC Mains	3wire	Unshielded	1.5

EUT OPERATION

During testing, the EUT was configured to continuously transmit at maximum output power and noted data rate on the channel indicated. A preliminary evaluation was performed to determine the worse case data rate for each mode.

TEST SITE

GENERAL INFORMATION

Final test measurements were taken at the test sites listed below. Pursuant to section 2.948 of the FCC's Rules and section 3.3 of RSP-100, construction, calibration, and equipment data has been filed with the Commission and with industry Canada.

Site	Designation / Registration Numbers		Location
	FCC	Canada	
Chamber 3	US0027	2845B-3	41039 Boyce Road Fremont, CA 94538-2435
Chamber 4	US0027	2845B-4	
Chamber 5	US0027	2845B-5	
Chamber 7	US0027	2845B-7	

ANSI C63.4 recommends that ambient noise at the test site be at least 6 dB below the allowable limits. Ambient levels are below this requirement. The test site(s) contain separate areas for radiated and conducted emissions testing. Considerable engineering effort has been expended to ensure that the facilities conform to all pertinent requirements of ANSI C63.4.

CONDUCTED EMISSIONS CONSIDERATIONS

Conducted emissions testing is performed in conformance with ANSI C63.10. Measurements are made with the EUT connected to the public power network through a nominal, standardized RF impedance, which is provided by a line impedance stabilization network, known as a LISN. A LISN is inserted in series with each current-carrying conductor in the EUT power cord.

RADIATED EMISSIONS CONSIDERATIONS

The FCC has determined that radiation measurements made in a shielded enclosure are not suitable for determining levels of radiated emissions. Radiated measurements are performed in an open field environment or in a semi-anechoic chamber. The test sites are maintained free of conductive objects within the CISPR defined elliptical area incorporated in ANSI C63.4 guidelines and meet the Normalized Site Attenuation (NSA) requirements of ANSI C63.4.

MEASUREMENT INSTRUMENTATION

RECEIVER SYSTEM

An EMI receiver as specified in CISPR 16-1-1 is used for emissions measurements. The receivers used can measure over the frequency range of 9 kHz up to 2000 MHz. These receivers allow both ease of measurement and high accuracy to be achieved. The receivers have Peak, Average, and CISPR (Quasi-peak) detectors built into their design so no external adapters are necessary. The receiver automatically sets the required bandwidth for the CISPR detector used during measurements. If the repetition frequency of the signal being measured is below 20Hz, peak measurements are made in lieu of Quasi-Peak measurements.

For measurements above the frequency range of the receivers, a spectrum analyzer is utilized because it provides visibility of the entire spectrum along with the precision and versatility required to support engineering analysis. Average measurements above 1000MHz are performed on the spectrum analyzer using the linear-average method with a resolution bandwidth of 1 MHz and a video bandwidth of 10 Hz, unless the signal is pulsed in which case the average (or video) bandwidth of the measuring instrument is reduced to onset of pulse desensitization and then increased.

INSTRUMENT CONTROL COMPUTER

The receivers utilize either a Rohde & Schwarz EZM Spectrum Monitor/Controller or contain an internal Spectrum Monitor/Controller to view and convert the receiver measurements to the field strength at an antenna or voltage developed at the LISN measurement port, which is then compared directly with the appropriate specification limit. This provides faster, more accurate readings by performing the conversions described under Sample Calculations within the Test Procedures section of this report. Results are printed in a graphic and/or tabular format, as appropriate. A personal computer is used to record all measurements made with the receivers. The software used for radiated and conducted emissions measurements is NTS EMI Test Software (rev 2.10)

The Spectrum Monitor provides a visual display of the signal being measured. In addition, the controller or a personal computer run automated data collection programs which control the receivers. This provides added accuracy since all site correction factors, such as cable loss and antenna factors are added automatically.

LINE IMPEDANCE STABILIZATION NETWORK (LISN)

Line conducted measurements utilize a fifty microhenry Line Impedance Stabilization Network as the monitoring point. The LISN used also contains a 250 uH CISPR adapter. This network provides for calibrated radio frequency noise measurements by the design of the internal low pass and high pass filters on the EUT and measurement ports, respectively.

FILTERS/ATTENUATORS

External filters and precision attenuators are often connected between the receiving antenna or LISN and the receiver. This eliminates saturation effects and non-linear operation due to high amplitude transient events.

ANTENNAS

A loop antenna is used below 30 MHz. For the measurement range 30 MHz to 1000 MHz either a combination of a biconical antenna and a log periodic or a bi-log antenna is used. Above 1000 MHz, horn antennas are used. The antenna calibration factors to convert the received voltage to an electric field strength are included with appropriate cable loss and amplifier gain factors to determine an overall site factor, which is then programmed into the test receivers or incorporated into the test software.

ANTENNA MAST AND EQUIPMENT TURNTABLE

The antennas used to measure the radiated electric field strength are mounted on a non-conductive antenna mast equipped with a motor-drive to vary the antenna height. Measurements below 30 MHz are made with the loop antenna at a fixed height of 1m above the ground plane.

ANSI C63.10 specifies that the test height above ground for table mounted devices shall be 80 centimeters for measurements below 1GHz and 1.5m for measurements above 1GHz. Floor mounted equipment shall be placed on the ground plane if the device is normally used on a conductive floor or separated from the ground plane by insulating material from 3 to 12 mm if the device is normally used on a non-conductive floor as specified in ANSI C63.4. During radiated measurements, the EUT is positioned on a motorized turntable in conformance with this requirement.

INSTRUMENT CALIBRATION

All test equipment is regularly checked to ensure that performance is maintained in accordance with the manufacturer's specifications. All antennas are calibrated at regular intervals with respect to tuned half-wave dipoles. An exhibit of this report contains the list of test equipment used and calibration information.

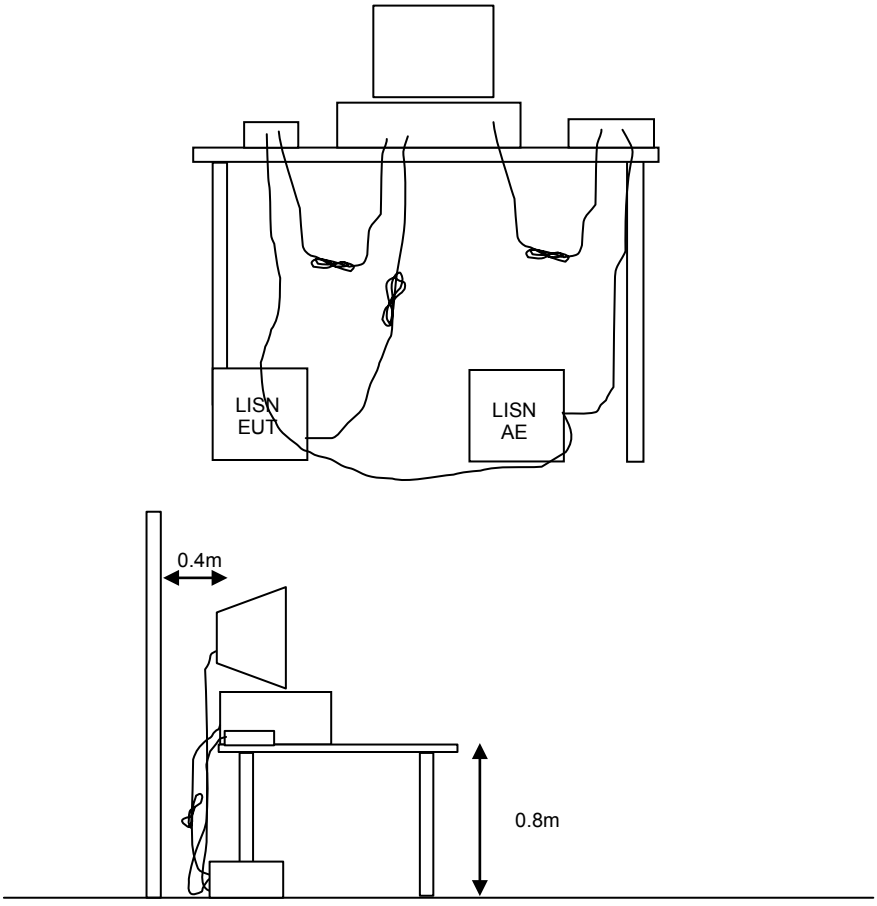
TEST PROCEDURES

EUT AND CABLE PLACEMENT

The regulations require that interconnecting cables be connected to the available ports of the unit and that the placement of the unit and the attached cables simulate the worst case orientation that can be expected from a typical installation, so far as practicable. To this end, the position of the unit and associated cabling is varied within the guidelines of ANSI C63.10, and the worst-case orientation is used for final measurements.

CONDUCTED EMISSIONS

Conducted emissions are measured at the plug end of the power cord supplied with the EUT. Excess power cord length is wrapped in a bundle between 30 and 40 centimeters in length near the center of the cord. Preliminary measurements are made to determine the highest amplitude emission relative to the specification limit for all the modes of operation. Placement of system components and varying of cable positions are performed in each mode. A final peak mode scan is then performed in the position and mode for which the highest emission was noted on all current carrying conductors of the power cord.



MCOManufacturerEMCOManufacturerEMCOManufacturerRadiated Emissions

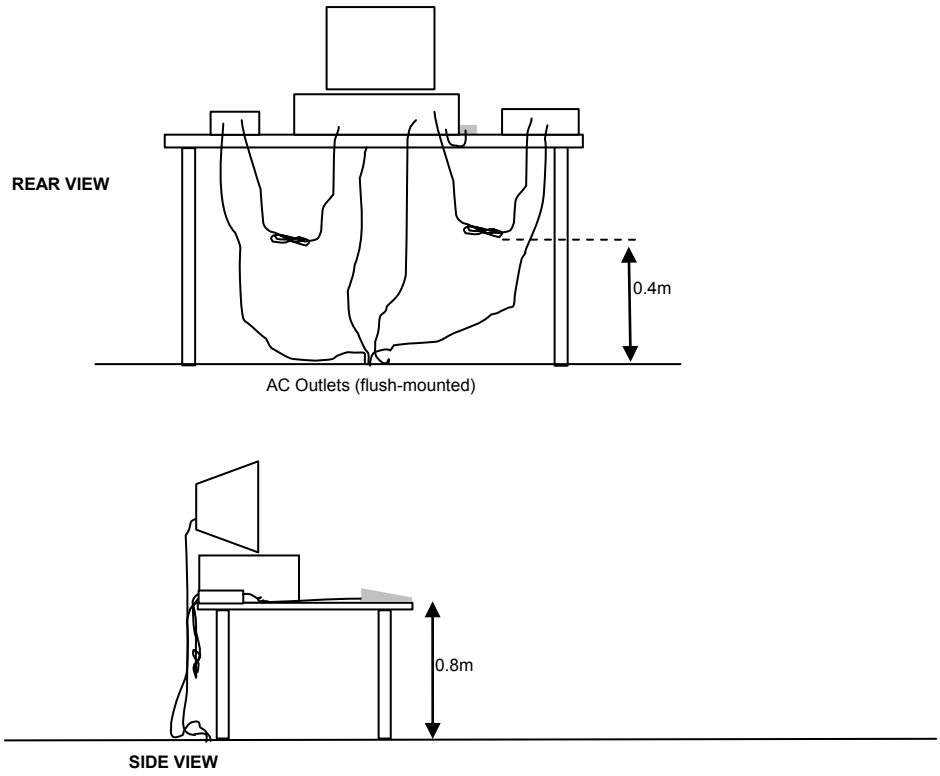
RADIATED EMISSIONS

A preliminary scan of the radiated emissions is performed in which all significant EUT frequencies are identified with the system in a nominal configuration. At least two scans are performed, one scan for each antenna polarization (horizontal and vertical; loop parallel and perpendicular to the EUT). During the preliminary scans, the EUT is rotated through 360˚, the antenna height is varied (for measurements above 30 MHz) and cable positions are varied to determine the highest emission relative to the limit. Preliminary scans may be performed in a fully anechoic chamber for the purposes of identifying the frequencies of the highest emissions from the EUT.

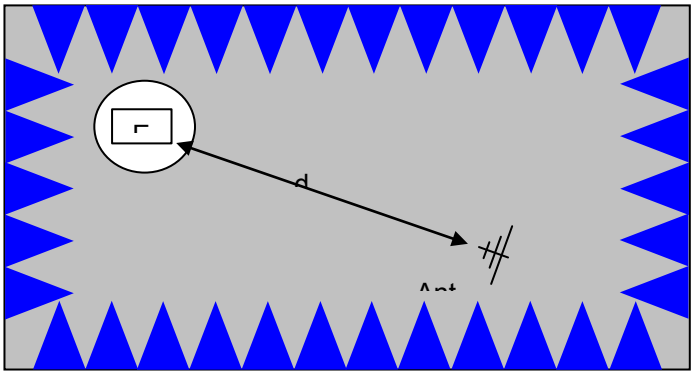
A speaker is provided in the receiver to aid in discriminating between EUT and ambient emissions. Other methods used during the preliminary scan for EUT emissions involve scanning with near field magnetic loops, monitoring I/O cables with RF current clamps, and cycling power to the EUT.

Final maximization is a phase in which the highest amplitude emissions identified in the spectral search are viewed while the EUT azimuth angle is varied from 0 to 360 degrees relative to the receiving antenna. The azimuth, which results in the highest emission is then maintained while varying the antenna height from one to four meters (for measurements above 30 MHz, measurements below 30 MHz are made with the loop antenna at a fixed height of 1m). The result is the identification of the highest amplitude for each of the highest peaks. Each recorded level is corrected in the receiver using appropriate factors for cables, connectors, antennas, and preamplifier gain.

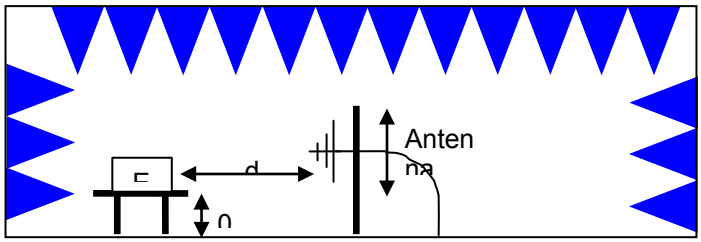
When testing above 18 GHz, the receive antenna is located at 1meter from the EUT and the antenna height is restricted to a maximum of 2.5 meters.



Typical Test Configuration for Radiated Field Strength Measurements



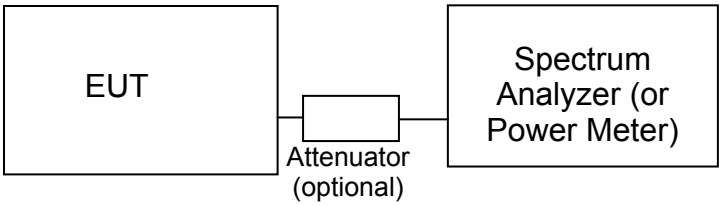
The anechoic materials on the walls and ceiling ensure compliance with the normalized site attenuation requirements of CISPR 16 / CISPR 22 / ANSI C63.4 for an alternate test site at the measurement distances used



Test Configuration for Radiated Field Strength Measurements
Semi-Anechoic Chamber, Plan and Side Views

CONDUCTED EMISSIONS FROM ANTENNA PORT

Direct measurements of power, bandwidth and power spectral density are performed, where possible, with the antenna port of the EUT connected to either the power meter or spectrum analyzer via a suitable attenuator and/or filter. These are used to ensure that the front end of the measurement instrument is not overloaded by the fundamental transmission.



Test Configuration for Antenna Port Measurements

Measurement bandwidths (video and resolution) are set in accordance with the relevant standards and NTS Silicon Valley's test procedures for the type of radio being tested. When power measurements are made using a resolution bandwidth less than the signal bandwidth the power is calculated by summing the power across the signal bandwidth using either the analyzer channel power function or by capturing the trace data and calculating the power using software. In both cases the summed power is corrected to account for the equivalent noise bandwidth (ENBW) of the resolution bandwidth used.

If power averaging is used (typically for certain digital modulation techniques), the EUT is configured to transmit continuously. Power averaging is performed using either the built-in function of the analyzer or, if the analyzer does not feature power averaging, using external software. In both cases the average power is calculated over a number of sweeps (typically 100). When the EUT cannot be configured to continuously transmit then either the analyzer is configured to perform a gated sweep to ensure that the power is averaged over periods that the device is transmitting or power averaging is disabled and a max-hold feature is used.

If a power meter is used to make output power measurements the sensor head type (peak or average) is stated in the test data table.

BANDWIDTH MEASUREMENTS

The 6dB, 20dB, 26dB and/or 99% signal bandwidth are measured using the bandwidths recommended by ANSI C63.10 and RSS GEN.

SPECIFICATION LIMITS AND SAMPLE CALCULATIONS

The limits for conducted emissions are given in units of microvolts, and the limits for radiated emissions are given in units of microvolts per meter at a specified test distance. Data is measured in the logarithmic form of decibels relative to one microvolt, or dB microvolts (dBuV). For radiated emissions, the measured data is converted to the field strength at the antenna in dB microvolts per meter (dBuV/m). The results are then converted to the linear forms of uV and uV/m for comparison to published specifications.

For reference, converting the specification limits from linear to decibel form is accomplished by taking the base ten logarithm, then multiplying by 20. These limits in both linear and logarithmic form are as follows:

CONDUCTED EMISSIONS SPECIFICATION LIMITS: FCC 15.207; FCC 15.107(a), RSS GEN

The table below shows the limits for the emissions on the AC power line from an intentional radiator and a receiver.

Frequency (MHz)	Average Limit (dBuV)	Quasi Peak Limit (dBuV)
0.150 to 0.500	Linear decrease on logarithmic frequency axis between 56.0 and 46.0	Linear decrease on logarithmic frequency axis between 66.0 and 56.0
0.500 to 5.000	46.0	56.0
5.000 to 30.000	50.0	60.0

GENERAL TRANSMITTER RADIATED EMISSIONS SPECIFICATION LIMITS

The table below shows the limits for the spurious emissions from transmitters that fall in restricted bands[1].

Frequency Range (MHz)	Limit (uV/m)	Limit (dBuV/m @ 3m)
0.009-0.490	$2400/F_{KHz}$ @ 300m	$67.6-20*\log_{10}(F_{KHz})$ @ 300m
0.490-1.705	$24000/F_{KHz}$ @ 30m	$87.6-20*\log_{10}(F_{KHz})$ @ 30m
1.705 to 30	30 @ 30m	29.5 @ 30m
30 to 88	100 @ 3m	40 @ 3m
88 to 216	150 @ 3m	43.5 @ 3m
216 to 960	200 @ 3m	46.0 @ 3m
Above 960	500 @ 3m	54.0 @ 3m

FCC 15.407 (a) OUTPUT POWER LIMITS

The table below shows the limits for output power and output power density. In the 5250-5350MHz and 5470-5725MHz bands, where the signal bandwidth is less than 20 MHz the maximum output power is reduced to the power spectral density limit plus 10 times the log of the bandwidth (in MHz).

Operating Frequency (MHz)	Output Power	Power Spectral Density
5150 – 5250	1000 mW (30 dBm)	17 dBm/MHz
5250 – 5350	250 mW (24 dBm)	11 dBm/MHz
5745 – 5725	250 mW (24 dBm)	11 dBm/MHz
5725 – 5850	1 Watts (30 dBm)	30 dBm/500kHz

For system using antennas with gains exceeding 6dBi, the output power and power spectral density limits are reduced by 1dB for every dB the antenna gain exceeds 6dBi.

[1] The restricted bands are detailed in FCC 15.205, RSS-GEN Table 3

OUTPUT POWER LIMITS –LELAN DEVICES

The table below shows the limits for output power and output power density defined by RSS 247. In the 5150-5250MHz, 5250-5350MHz and 5470-5725MHz bands, where the signal bandwidth is less than 20 MHz the maximum output power is reduced to the power spectral density limit plus 10 times the log of the bandwidth (in MHz).

Operating Frequency (MHz)	Output Power	Power Spectral Density
5150 – 5250	200mW (23 dBm) eirp	10 dBm/MHz eirp
5250 – 5350	250 mW (24 dBm)2 1W (30dBm) eirp	11 dBm/MHz
5470 – 5725	250 mW (24 dBm)3 1W (30dBm) eirp	11 dBm/MHz
5725 – 5850	1 Watts (30 dBm) 4W eirp	30 dBm/ 500KHz

SPURIOUS EMISSIONS LIMITS –UNII and LELAN DEVICES

The spurious emissions limits for signals below 1GHz are the FCC/RSS-GEN general limits. For emissions above 1GHz, signals in restricted bands are subject to the FCC/RSS GEN general limits. All other signals have a limit of –27dBm/MHz, which is a field strength of 68.3dBuV/m/MHz at a distance of 3m. For devices operating in the 5725-5850Mhz bands under the LELAN/UNII rules, the limit within 10MHz of the allocated band is increased to –17dBm/MHz.

[2] If EIRP exceeds 500mW the device must employ TPC
[3] If EIRP exceeds 500mW the device must employ TPC

SAMPLE CALCULATIONS - CONDUCTED EMISSIONS

Receiver readings are compared directly to the conducted emissions specification limit (decibel form) as follows:

$$R_r - S = M$$

where:

R_r = Receiver Reading in dBuV

S = Specification Limit in dBuV

M = Margin to Specification in +/- dB

SAMPLE CALCULATIONS - RADIATED EMISSIONS

Receiver readings are compared directly to the specification limit (decibel form). The receiver internally corrects for cable loss, preamplifier gain, and antenna factor. The calculations are in the reverse direction of the actual signal flow, thus cable loss is added and the amplifier gain is subtracted. The Antenna Factor converts the voltage at the antenna coaxial connector to the field strength at the antenna elements.

A distance factor, when used for electric field measurements above 30MHz, is calculated by using the following formula:

$$F_d = 20*LOG_{10} (D_m/D_s)$$

where:

F_d = Distance Factor in dB

D_m = Measurement Distance in meters

D_s = Specification Distance in meters

For electric field measurements below 30MHz the extrapolation factor is either determined by making measurements at multiple distances or a theoretical value is calculated using the formula:

$$F_d = 40*LOG_{10} (D_m/D_s)$$

Measurement Distance is the distance at which the measurements were taken and Specification Distance is the distance at which the specification limits are based. The antenna factor converts the voltage at the antenna coaxial connector to the field strength at the antenna elements.

The margin of a given emission peak relative to the limit is calculated as follows:

$$R_c = R_r + F_d$$

and

$$M = R_c - L_s$$

where:

R_r = Receiver Reading in dBuV/m

F_d = Distance Factor in dB

R_C = Corrected Reading in dBuV/m

L_S = Specification Limit in dBuV/m

M = Margin in dB Relative to Spec

SAMPLE CALCULATIONS - FIELD STRENGTH TO EIRP CONVERSION

Where the radiated electric field strength is expressed in terms of the equivalent isotropic radiated power (eirp), or where a field strength measurement of output power is made in lieu of a direct measurement, the following formula is used to convert between eirp and field strength at a distance of d (meters) from the equipment under test:

$$E = \frac{1000000 \sqrt{30 P}}{d} \quad \text{microvolts per meter}$$

where P is the eirp (Watts)

For a measurement at 3m the conversion from a logarithmic value for field strength (dBuV/m) to an eirp power (dBm) is -95.3dB.

Appendix A Test Equipment Calibration Data

Manufacturer	Description	Model	Asset #	Calibrated	Cal Due
Radiated Emissions, 1000 - 6,500 MHz, 25-Sep-15					
EMCO	Antenna, Horn, 1-18 GHz	3115	1561	6/27/2014	6/27/2016
Rohde & Schwarz	EMI Test Receiver, 20 Hz-7 GHz	ESIB7	1630	7/6/2015	7/6/2016
Radiated Emissions, Band edge, 28-Sep-15					
EMCO	Antenna, Horn, 1-18 GHz	3115	786	12/20/2013	12/20/2015
Rohde & Schwarz	EMI Test Receiver, 20 Hz-40 GHz	ESIB40 (1088.7490.40)	2493	1/23/2015	1/23/2016
Radiated Emissions, 1,000 - 18,000 MHz, 28-Sep-15					
EMCO	Antenna, Horn, 1-18 GHz	3115	786	12/20/2013	12/20/2015
Hewlett Packard	Microwave Preamplifier, 1-26.5GHz	8449B	870	2/20/2015	2/20/2016
Hewlett Packard	SpecAn 30 Hz -40 GHz, SV (SA40) Red	8564E (84125C)	1148	9/20/2014	10/20/2015
Hewlett Packard	High Pass filter, 8.2 GHz	P/N 84300-80039	1152	7/10/2015	7/10/2016
Micro-Tronics	Band Reject Filter, 5150-5350 MHz	BRC50703-02	1729	7/8/2015	7/8/2016
Radiated Emissions, 1,000 - 12,000 MHz, 30-Sep-15					
EMCO	Antenna, Horn, 1-18 GHz	3115	786	12/20/2013	12/20/2015
Hewlett Packard	Microwave Preamplifier, 1-26.5GHz	8449B	870	2/20/2015	2/20/2016
Hewlett Packard	SpecAn 30 Hz -40 GHz, SV (SA40) Red	8564E (84125C)	1148	9/20/2014	10/20/2015
Micro-Tronics	Band Reject Filter, 5725-5875 MHz	BRC50705-02	1682	7/8/2015	7/8/2016
Micro-Tronics	Band Reject Filter, 5150-5350 MHz	BRC50703-02	1729	7/8/2015	7/8/2016
Radiated Emissions, 1,000 - 40,000 MHz, 01-Oct-15					
NTS	NTS EMI Software (rev 2.10)	N/A	0		N/A
EMCO	Antenna, Horn, 1-18 GHz	3115	786	12/20/2013	12/20/2015
Hewlett Packard	Microwave Preamplifier, 1-26.5GHz	8449B	870	2/20/2015	2/20/2016
Hewlett Packard	SA40 Head (Red)	84125C	1145	7/1/2015	7/17/2016
Hewlett Packard	SpecAn 30 Hz -40 GHz, SV (SA40) Red	8564E (84125C)	1148	9/20/2014	10/20/2015
Hewlett Packard	High Pass filter, 8.2 GHz	P/N 84300-80039	1152	7/10/2015	7/10/2016
Micro-Tronics	Band Reject Filter, 5725-5875 MHz	BRC50705-02	1682	7/8/2015	7/8/2016
A. H. Systems	Purple System Horn, 18-40GHz	SAS-574, p/n: 2581	2160	8/28/2014	8/28/2017
Radiated Emissions, Band Edge, 01-Oct-15					
EMCO	Antenna, Horn, 1-18 GHz	3115	786	12/20/2013	12/20/2015
Rohde & Schwarz	EMI Test Receiver, 20 Hz-40 GHz	ESIB40 (1088.7490.40)	2493	1/23/2015	1/23/2016

Manufacturer	Description	Model	Asset #	Calibrated	Cal Due
Radio Antenna Port (Power and Spurious Emissions), 07-Oct-15					
Agilent Technologies	PSA, Spectrum Analyzer, (installed options, 111, 115, 123, 1DS, B7J, HYX,	E4446A	2139	6/22/2015	6/22/2016
Antenna port measurements, 08-Oct-15					
Agilent Technologies	PSA, Spectrum Analyzer, (installed options, 111, 115, 123, 1DS, B7J, HYX,	E4446A	2139	6/22/2015	6/22/2016
Radio Antenna Port (Power and Spurious Emissions), 09-Oct-15					
Agilent Technologies	PSA, Spectrum Analyzer, (installed options, 111, 115, 123, 1DS, B7J, HYX,	E4446A	2139	6/22/2015	6/22/2016
Frequency Stability, 13-Oct-15					
Agilent Technologies	PSA, Spectrum Analyzer, (installed options, 111, 115, 123, 1DS, B7J, HYX,	E4446A	2139	6/22/2015	6/22/2016
Watlow	Temp Chamber (w/ F4 watlow Controller)	96A0	2171	7/14/2015	7/14/2016
Conducted Emissions - AC Power Ports, 19-Oct-15					
Rohde & Schwarz	Pulse Limiter	ESH3 Z2	1594	5/14/2015	5/14/2016
Fischer Custom Comm	LISN, 25A, 150kHz to 30MHz, 25 Amp,	FCC-LISN-50-25-2-09	2000	8/18/2015	9/18/2016
Rohde & Schwarz	EMI Test Receiver, 20 Hz-40 GHz	ESIB40 (1088.7490.40)	2493	1/23/2015	1/23/2016

Appendix B Test Data

T99512 Pages 28 – 126
T99598 Pages 127 – 131

Client:	Xirrus	Job Number:	JD99498
Product	XI-AC3470	T-Log Number:	T99512
System Configuration:	-	Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Emissions Standard(s):	FCC 15.247/15.407, RSS-247	Class:	-
Immunity Standard(s):	-	Environment:	-

EMC Test Data

For The

Xirrus

Product

XI-AC3470

Date of Last Test: 10/13/2015

Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A

RSS 247 and FCC 15.407 (UNII) Radiated Spurious Emissions

Test Specific Details

Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the specification listed above.

General Test Configuration

The EUT and all local support equipment were located on the turntable for radiated spurious emissions testing.
For radiated emissions testing the measurement antenna was located 3 meters from the EUT, unless otherwise noted.

Ambient Conditions:

Temperature: 20-22 °C
Rel. Humidity: 30-35 %

Modifications Made During Testing

No modifications were made to the EUT during testing

Deviations From The Standard

No deviations were made from the requirements of the standard.

Sample Notes

Sample S/N: BET3716XRU20110
Driver: 10.10 RC69.10
Antenna: Integral (4x4)

Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A

Summary of Results

Run #	Mode	Channel	Power Setting	Passing Power Setting	Test Performed	Limit	Result / Margin
20MHz Bandwith Modes							
1	a	36 - 5180MHz	16	15	Restricted Band Edge at 5150 MHz	15.209	52.5 dBµV/m @ 5149.7 MHz (-1.5 dB)
4	a	149 - 5745MHz	16	11	Band Edge 5715 MHz	15E	64.9 dBµV/m @ 5714.8 MHz (-3.4 dB)
					Band Edge 5715 - 5725 MHz		77.2 dBµV/m @ 5723.5 MHz (-1.1 dB)
		165 - 5825MHz	16	14	Band Edge 5850 MHz		75.3 dBµV/m @ 5857.3 MHz (-3.0 dB)
					Band Edge 5860 MHz		67.9 dBµV/m @ 5860.8 MHz (-0.4 dB)
20MHz Bandwith Modes (continued)							
5	HT20	36 - 5180MHz	16	14	Restricted Band Edge at 5150 MHz	15.209	52.4 dBµV/m @ 5149.8 MHz (-1.6 dB)
8	HT20	149 - 5745MHz	14	10	Band Edge 5715 MHz	15E	48.6 dBµV/m @ 5713.0 MHz (-5.4 dB)
					Band Edge 5715 - 5725 MHz		73.7 dBµV/m @ 5724.8 MHz (-4.6 dB)
		165 - 5825MHz	14	12	Band Edge 5850 MHz		74.7 dBµV/m @ 5850.0 MHz (-3.6 dB)
					Band Edge 5860 MHz		49.5 dBµV/m @ 5860.1 MHz (-4.5 dB)
40MHz Bandwith Modes							
9	HT40	38 - 5190MHz	15	10	Restricted Band Edge at 5150 MHz	15.209	52.4 dBµV/m @ 5149.8 MHz (-1.6 dB)
12	HT40	151 - 5755MHz	14	8	Band Edge 5715 MHz	15E	67.7 dBµV/m @ 5712.2 MHz (-0.6 dB)
					Band Edge 5715 - 5725 MHz		69.5 dBµV/m @ 5722.8 MHz (-8.8 dB)
		159 - 5795MHz	14	13	Band Edge 5850 MHz		65.2 dBµV/m @ 5859.2 MHz (-13.1 dB)
					Band Edge 5860 MHz		65.9 dBµV/m @ 5862.3 MHz (-2.4 dB)

Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A

Summary of Results (continued)

Run #	Mode	Channel	Power Setting	Passing Power Setting	Test Performed	Limit	Result / Margin
80MHz Bandwith Modes							
13	ac80	42 - 5210MHz	14	9	Restricted Band Edge at 5150 MHz	15.209	53.0 dBµV/m @ 5149.6 MHz (-1.1 dB)
16		155 - 5785MHz	13	8	Band Edge 5715 MHz	15E	67.9 dBµV/m @ 5692.2 MHz (-0.4 dB)
					Band Edge 5715 - 5725 MHz		67.2 dBµV/m @ 5722.3 MHz (-11.1 dB)
		155 - 5785MHz			Band Edge 5850 MHz		64.0 dBµV/m @ 5855.0 MHz (-14.3 dB)
					Band Edge 5860 MHz		64.2 dBµV/m @ 5870.4 MHz (-4.1 dB)

Procedure Comments:

Measurements performed in accordance with FCC KDB 789033
Peak measurements performed with: RBW=1MHz, VBW=3MHz, peak detector, max hold, auto sweep time
Unless otherwise stated/noted, emission has duty cycle ≥ 98% and was measured using RBW=1MHz, VBW=10Hz, peak detector, linear average mode, auto sweep time, max hold.

	Mode	Data Rate	Duty Cycle (x)	Constant DC?	T (ms)	Pwr Cor Factor*	Lin Volt Cor Factor**	Min VBW for FS (Hz)
	11g/a	6Mb/s	98.3%	Yes	2.086	0	0	10
	HT20	MCS0	98.6%	Yes	1.906	0.00	0.00	10
2-Oct	HT40	MCS0	98.0%	Yes	0.942	0.00	0.00	10
	ac80	VHT0	96.0%	Yes	0.46	0.18	0.35	2174

Measurement Specific Notes:

Note 1:	For emissions outside of the restricted bands the limit is -27dBm/MHz eirp (68.3dBuV/m). The measurement method required is a peak measurement (RB=1MHz, VB≥3MHz, peak detector). Per KDB 789033, compliance can be demonstrated by meeing the average and peak limits of 15.209, as an alternative.
Note 3:	Emission has constant duty cycle < 98%, average measurement performed: RBW=1MHz, VBW>1/T but not less than 10Hz, peak detector, linear averaging, auto sweep, trace average 100*1/DC traces, measurement corrected by Linear Voltage correction factor
Note 6:	Plots of the average and peak bandedge do not account for any duty cycle correction. Refer to the tabluar results for final measurements.

Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A

Run #1: Radiated Bandedge Measurements, 5150-5250MHz

Date of Test: 10/2/2015 Test Location: Chamber #5

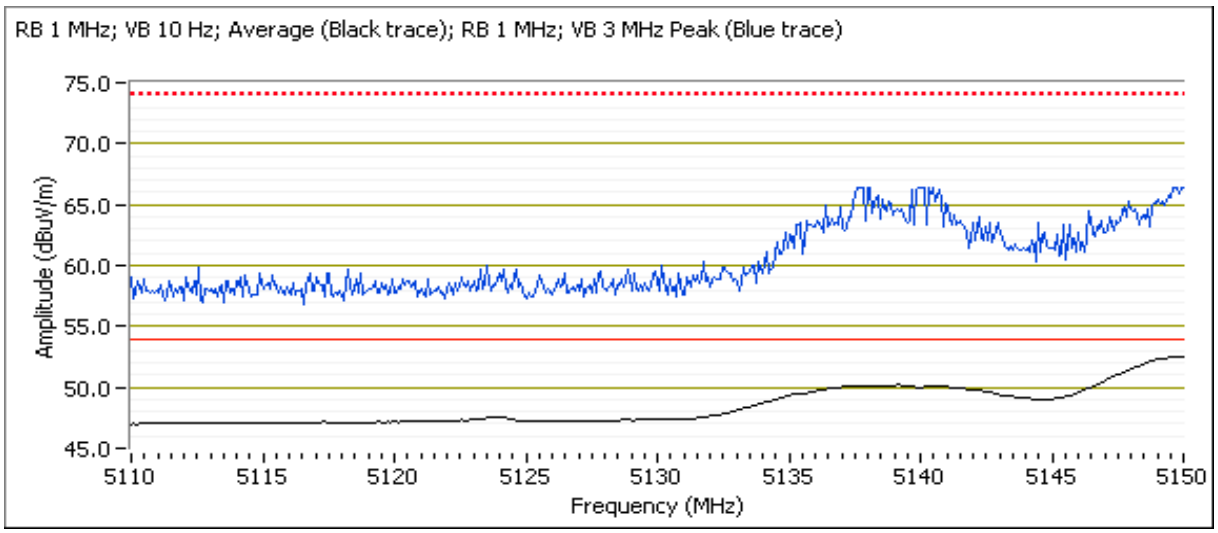
Test Engineer: Mehran Birgani EUT Voltage: POE

Channel: 36 - 5180 MHz Mode: a Setting: 15

Tx Chain: 4Tx (txchain 0xf) Data Rate: 6Mbps

5150 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	FCC 15.209		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5149.680	52.5	V	54.0	**-1.5**	AVG	30	1.8	POS; RB 1 MHz; VB: 10 Hz
5149.680	66.9	V	74.0	-7.1	PK	30	1.8	POS; RB 1 MHz; VB: 3 MHz
5150.000	46.3	H	54.0	-7.7	AVG	73	1.0	POS; RB 1 MHz; VB: 10 Hz
5148.960	58.5	H	74.0	-15.5	PK	73	1.0	POS; RB 1 MHz; VB: 3 MHz



Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A

Run #4: Radiated Bandedge Measurements, 5725-5850MHz

Date of Test: 10/2/2015 Test Location: Chamber #5

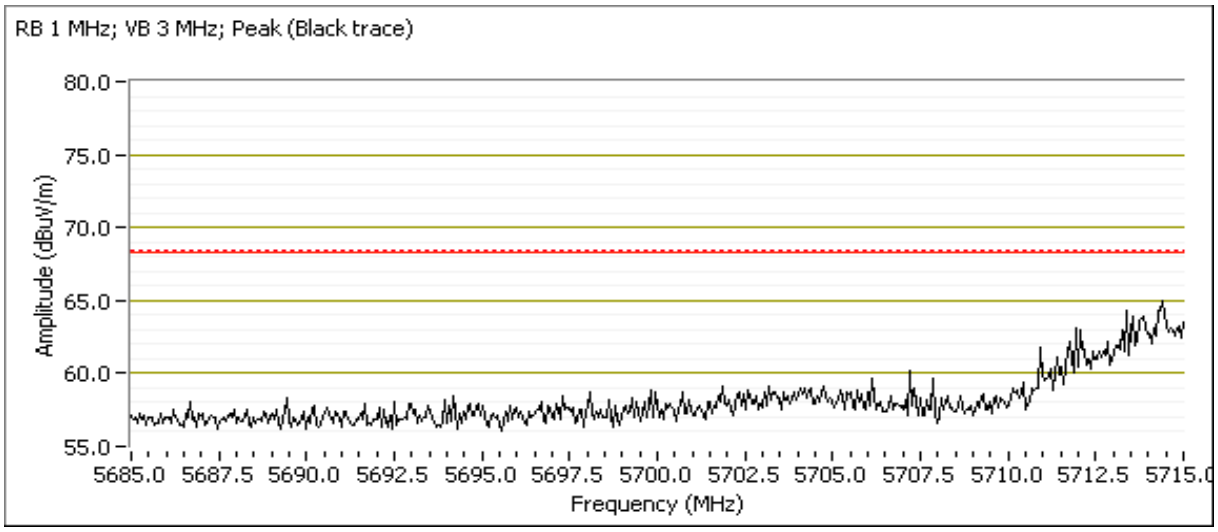
Test Engineer: Mehran Birgani EUT Voltage: POE

Channel: 149 - 5745MHz Mode: a Setting: 11

Tx Chain: 4Tx (txchain 0xf) Data Rate: 6Mbps

5715 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	15.E		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5714.760	64.9	V	68.3	**-3.4**	PK	46	1.2	POS; RB 1 MHz; VB: 3 MHz

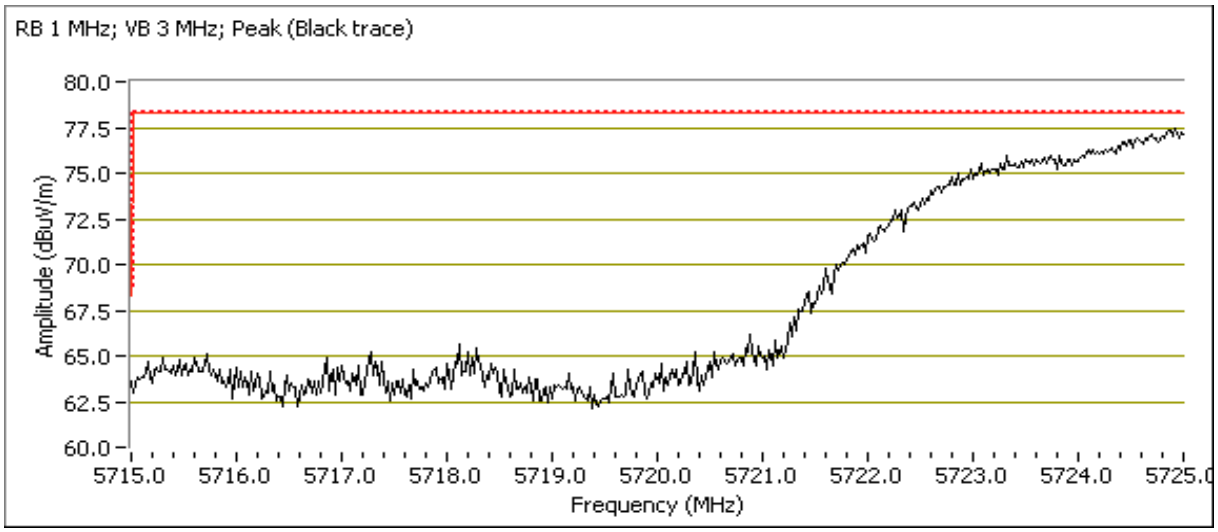


Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A

Channel: 149 - 5745MHz Mode: a Setting: 11
Tx Chain: 4Tx (txchain 0xf) Data Rate: 6Mbps

5715-5725 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	15.E		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5723.500	77.2	V	78.3	**-1.1**	PK	46	1.2	POS; RB 1 MHz; VB: 3 MHz

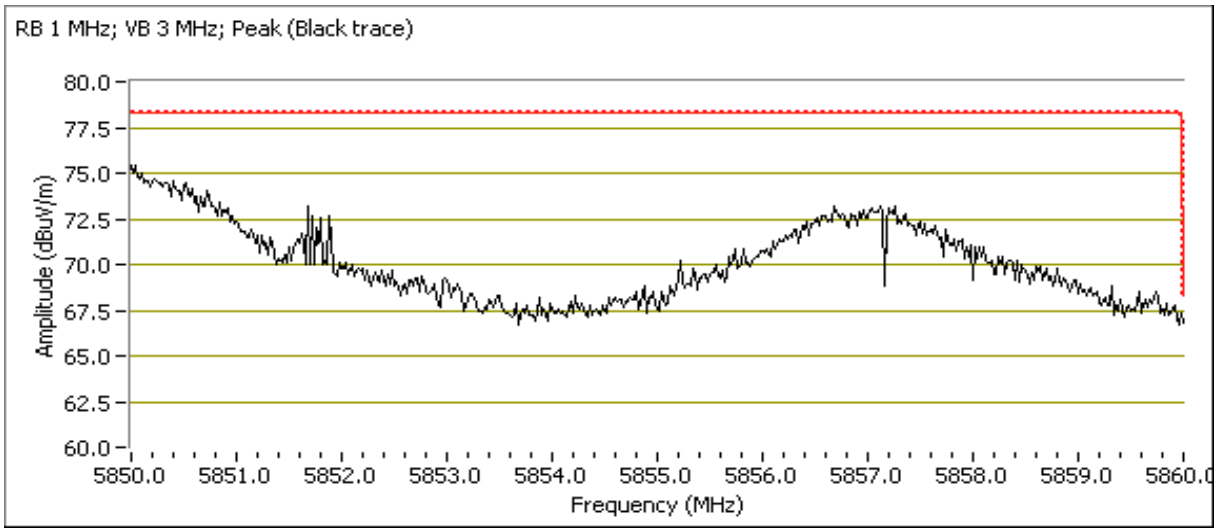


Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A

Channel: 165 - 5825MHz Mode: a Setting: 14
Tx Chain: 4Tx (txchain 0xf) Data Rate: 6Mbps

5850 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	15.E		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5857.270	75.3	V	78.3	**-3.0**	PK	51	1.7	POS; RB 1 MHz; VB: 3 MHz

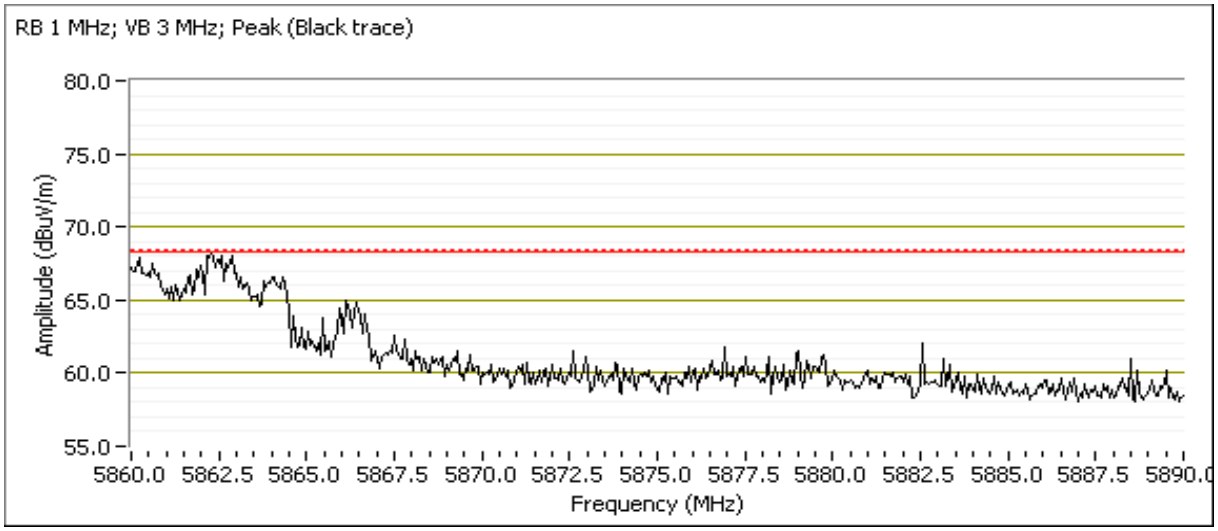


Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A

Channel: 165 - 5825MHz Mode: a Setting: 14
Tx Chain: 4Tx (txchain 0xf) Data Rate: 6Mbps

5860 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	15.E		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5860.780	67.9	V	68.3	**-0.4**	PK	51	1.7	POS; RB 1 MHz; VB: 3 MHz



Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A

Run #5: Radiated Bandedge Measurements, 5150-5250MHz

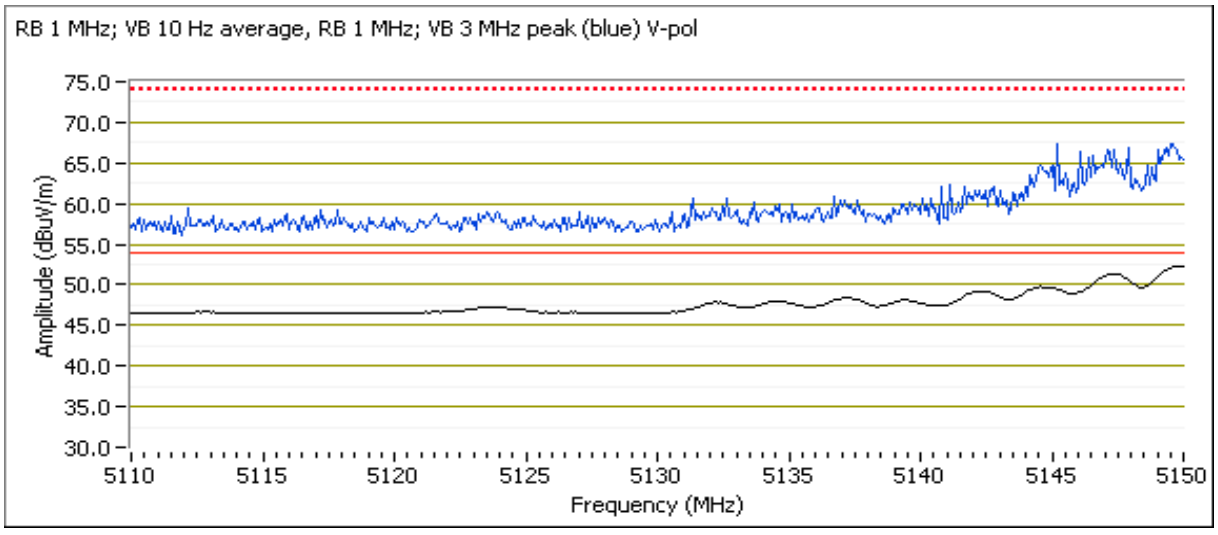
Date of Test: 10/2/2015
Test Engineer: Mark Hill
Test Location: FT Ch #5

Config. Used: 1
Config Change: None
EUT Voltage: POE

Channel: 36 - 5180 MHz
Tx Chain: 4Tx (txchain 0xf)
Mode: HT20
Data Rate: MCS0

5150 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	FCC 15.209		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5149.800	52.4	V	54.0	-1.6	AVG	0	1.9	POS; RB 1 MHz; VB: 10 Hz
5146.820	67.8	V	74.0	-6.2	PK	0	1.9	POS; RB 1 MHz; VB: 3 MHz
5148.970	44.7	H	54.0	-9.3	AVG	337	1.0	POS; RB 1 MHz; VB: 10 Hz
5149.400	56.9	H	74.0	-17.1	PK	337	1.0	POS; RB 1 MHz; VB: 3 MHz



Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A

Run #8: Radiated Bandedge Measurements, 5725-5850MHz

Date of Test: 10/2/2015 Config. Used: 1
Test Engineer: Mark Hill Config Change: None
Test Location: FT Ch #5 EUT Voltage: POE

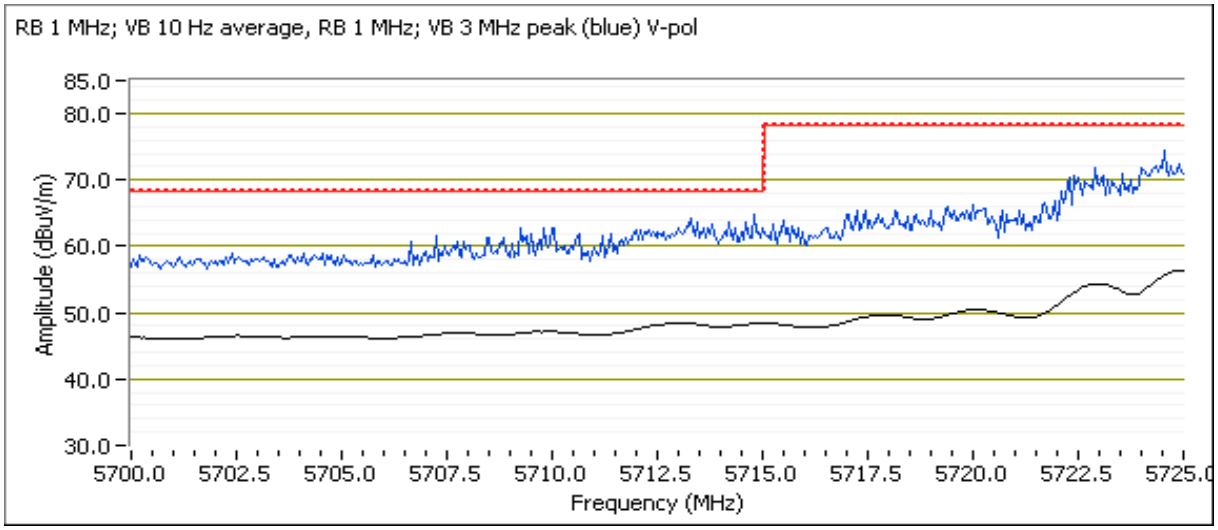
Channel: 149 - 5745MHz
Tx Chain: 4Tx (txchain 0xf)
Mode: HT20
Data Rate: MCS0

5715 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	15.E		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5713.030	48.6	V	54.0	-5.4	AVG	37	1.9	POS; RB 1 MHz; VB: 10 Hz
5712.060	62.8	V	74.0	-11.2	PK	37	1.9	POS; RB 1 MHz; VB: 3 MHz
5713.470	45.2	H	54.0	-8.8	AVG	91	1.4	POS; RB 1 MHz; VB: 10 Hz
5714.550	56.6	H	74.0	-17.4	PK	91	1.4	POS; RB 1 MHz; VB: 3 MHz

5715-5725 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	15.E		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5724.830	73.7	V	78.3	-4.6	PK	37	1.9	POS; RB 1 MHz; VB: 3 MHz
5723.650	65.9	H	78.3	-12.4	PK	91	1.4	POS; RB 1 MHz; VB: 3 MHz



Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A

Channel: 165 - 5825MHz
Tx Chain: 4Tx (txchain 0xf)
Mode: HT20
Data Rate: MCS0

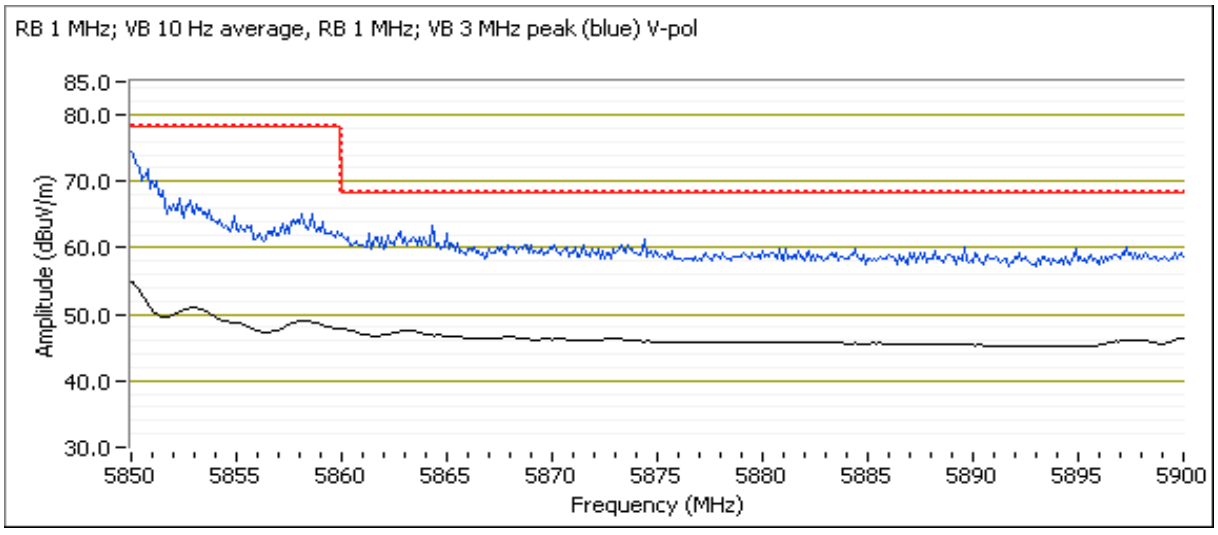
5850 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	15.E		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5850.040	74.7	V	78.3	-3.6	PK	47	1.7	POS; RB 1 MHz; VB: 3 MHz

5860 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	15.E		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5860.080	49.5	V	54.0	-4.5	AVG	47	1.7	POS; RB 1 MHz; VB: 10 Hz
5864.740	63.1	V	74.0	-10.9	PK	47	1.7	POS; RB 1 MHz; VB: 3 MHz

Note: Vertical polarity was the worse case



Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A

Run #9: Radiated Bandedge Measurements, 5150-5250MHz

Date of Test: 10/2/2015 Test Location: Chamber #5

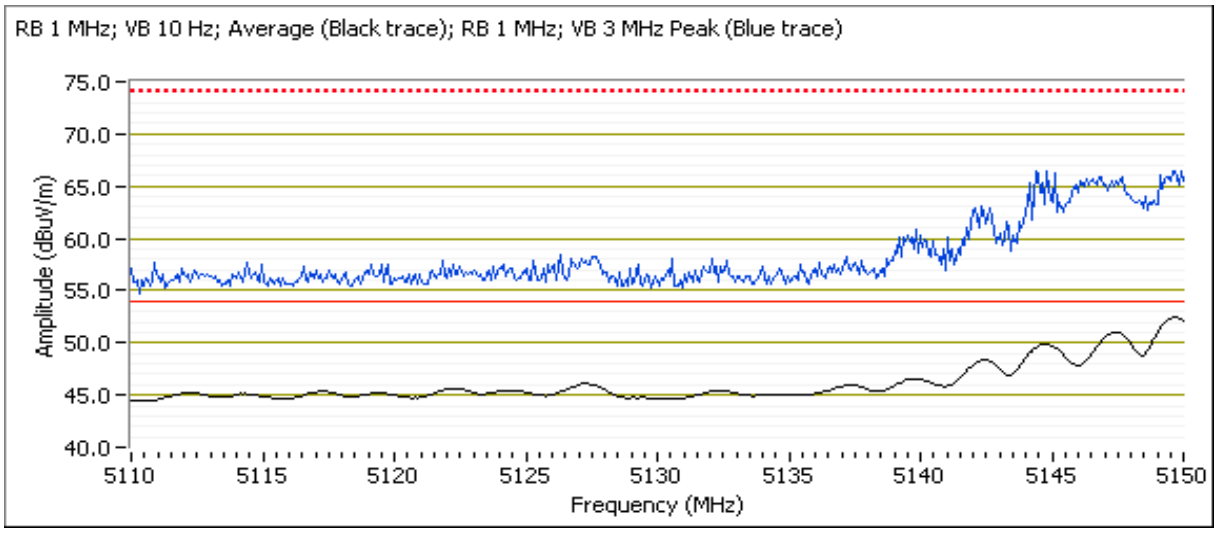
Test Engineer: Mehran Birgani EUT Voltage: POE

Channel: 38 - 5190 MHz Mode: HT40 Setting: 10

Tx Chain: 4Tx (txchain 0xf) Data Rate: MCS0

5150 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	FCC 15.209		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5149.760	52.4	V	54.0	**-1.6**	AVG	50	1.7	POS; RB 1 MHz; VB: 10 Hz
5149.280	67.7	V	74.0	-6.3	PK	50	1.7	POS; RB 1 MHz; VB: 3 MHz



Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A

Run #12: Radiated Bandedge Measurements, 5725-5850MHz

Date of Test: 10/2/2015 Test Location: Chamber #5

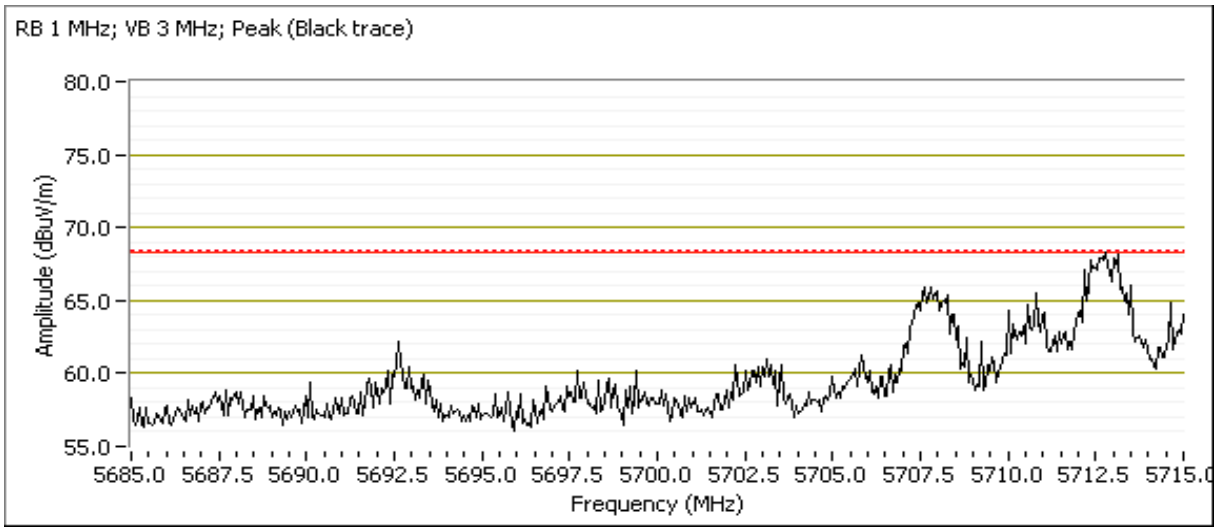
Test Engineer: Mehran Birgani EUT Voltage: POE

Channel: 151 - 5755MHz Mode: HT40 Setting: 8

Tx Chain: 4Tx (txchain 0xf) Data Rate: MCS0

5715 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	15.E		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5712.230	**67.7**	V	68.3	**-0.6**	PK	30	2.0	POS; RB 1 MHz; VB: 3 MHz

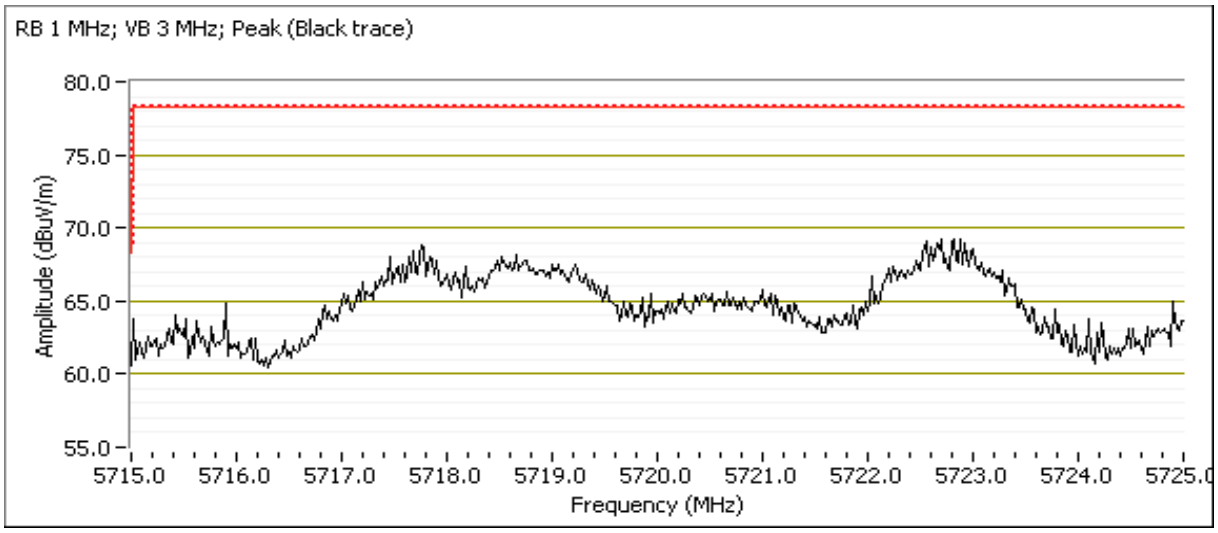


Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A

Channel: 151 - 5755MHz Mode: HT40 Setting: 8
Tx Chain: 4Tx (txchain 0xf) Data Rate: MCS0

5715-5725 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	15.E		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5722.780	69.5	V	78.3	**-8.8**	PK	30	2.0	POS; RB 1 MHz; VB: 3 MHz

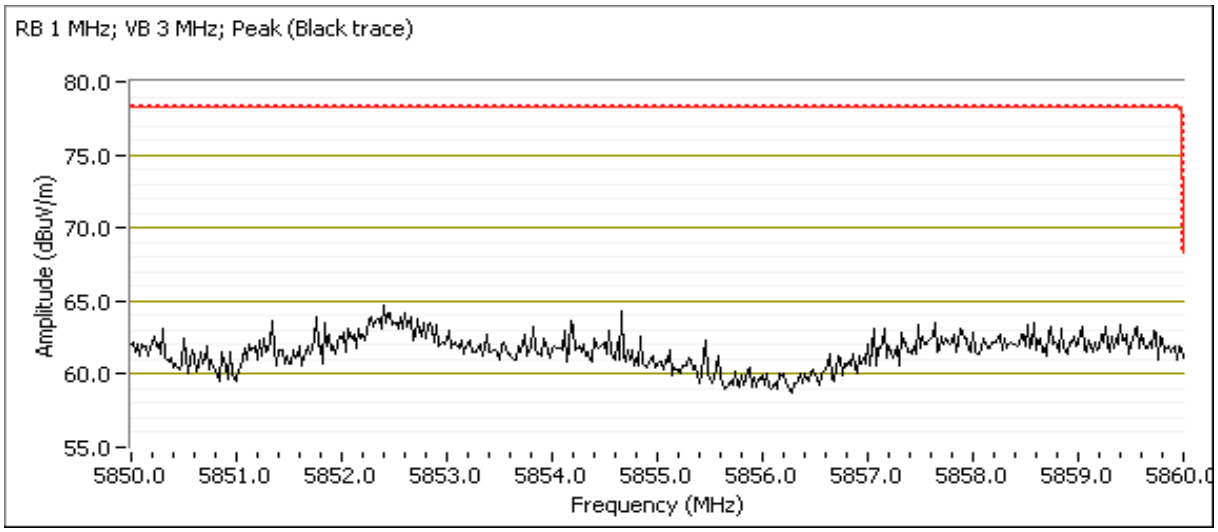


Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A

Channel: 159 - 5795MHz Mode: HT40 Setting: 13
Tx Chain: 4Tx (txchain 0xf) Data Rate: MCS0

5850 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	15.E		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5859.180	**65.2**	V	78.3	**-13.1**	PK	30	1.7	POS; RB 1 MHz; VB: 3 MHz

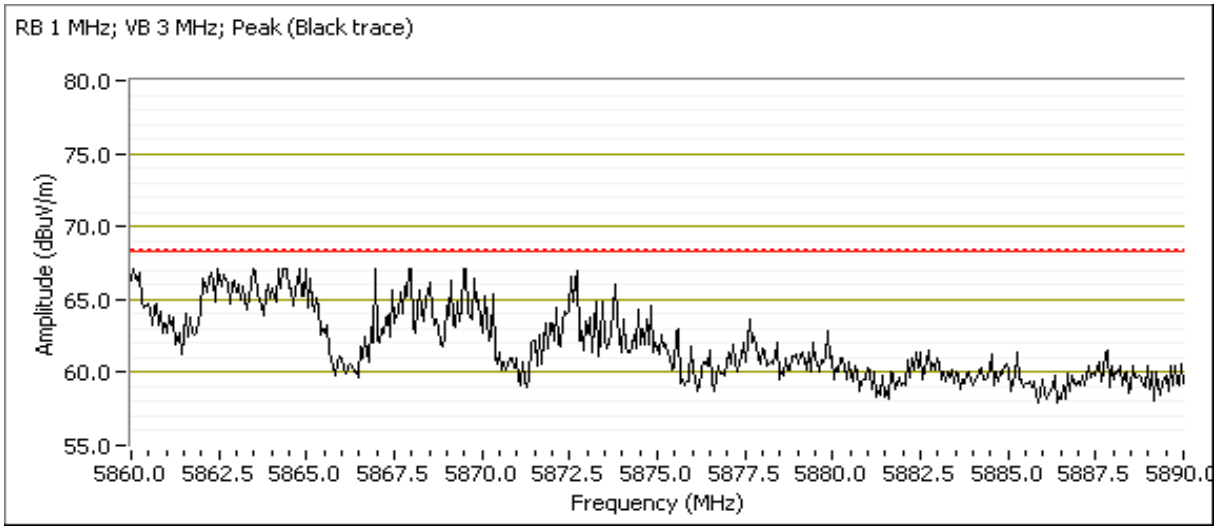


Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A

Channel: 159 - 5795MHz Mode: HT40 Setting: 13
Tx Chain: 4Tx (txchain 0xf) Data Rate: MCS0

5860 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	15.E		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5862.280	**65.9**	V	68.3	**-2.4**	PK	30	1.7	POS; RB 1 MHz; VB: 3 MHz



Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A

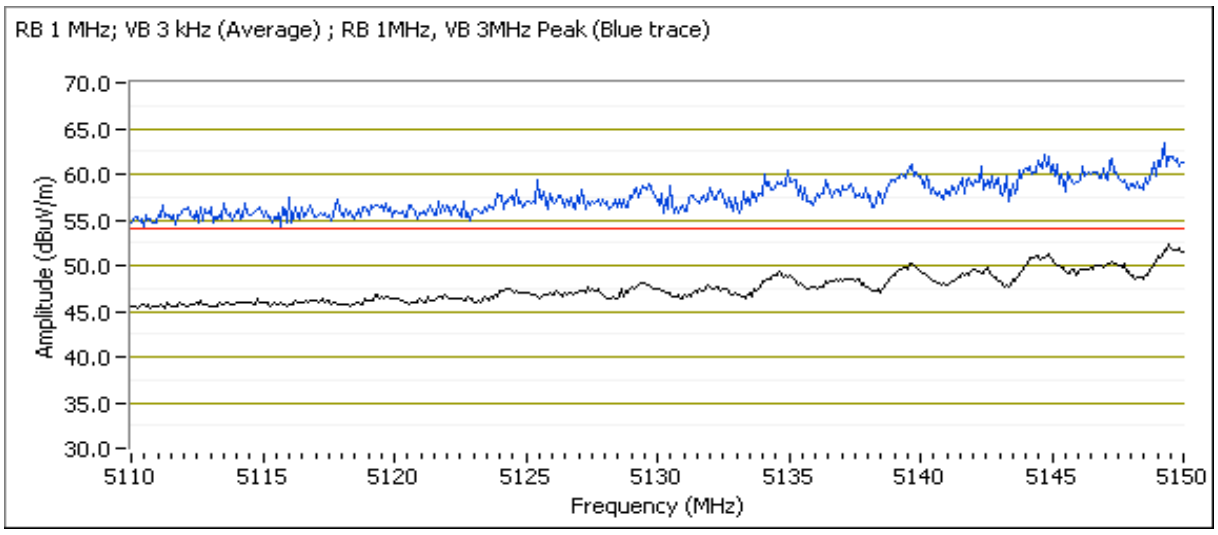
Run #13: Radiated Bandedge Measurements, 5150-5250MHz

Date of Test: 10/5/2015 Test Location: Chamber #5
Test Engineer: John Caizi EUT Voltage: POE

Channel: 42 - 5210MHz Mode: ac80 Setting: 9
Tx Chain: 4Tx (txchain 0xf) Data Rate: VHT0

5150 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	FCC 15.209		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5149.560	53.0	V	54.0	-1.1	Avg	36	1.7	Note 3,POS Vavg:100; RB 1 MHz; VB
5149.490	65.2	V	74.0	-8.8	PK	36	1.7	POS; RB 1 MHz; VB: 3 MHz



Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A

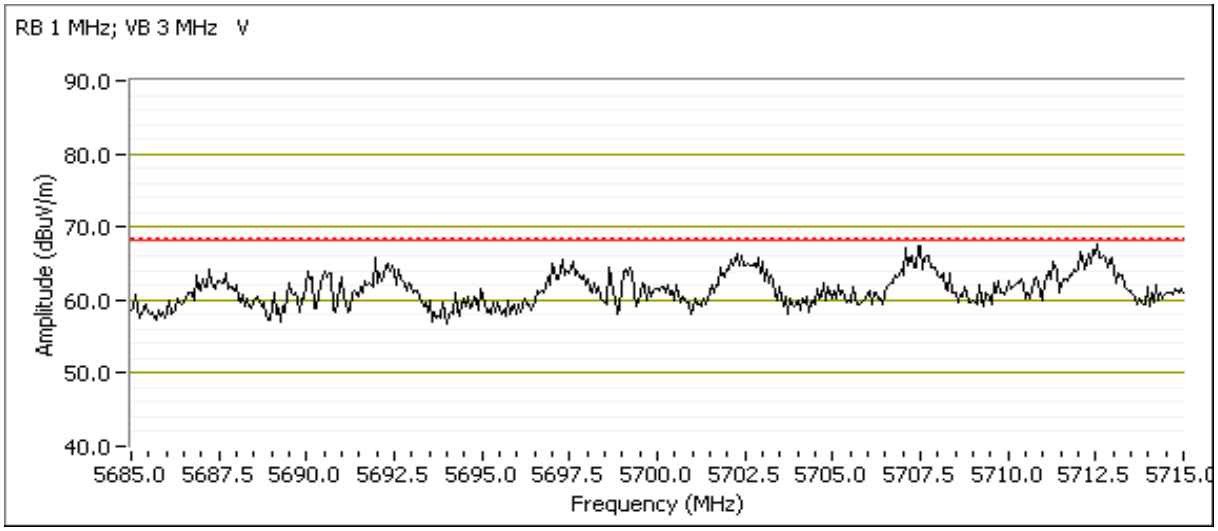
Run #16: Radiated Bandedge Measurements, 5725-5850 MHz

Date of Test: 10/5/2015 Test Location: Chamber #5
Test Engineer: John Caizzi EUT Voltage: POE

Channel: 155 - 5785MHz Mode: ac80 Setting: 8
Tx Chain: 4Tx (txchain 0xf) Data Rate: VHT0

5715 MHz Band Edge Signal Radiated Field Strength

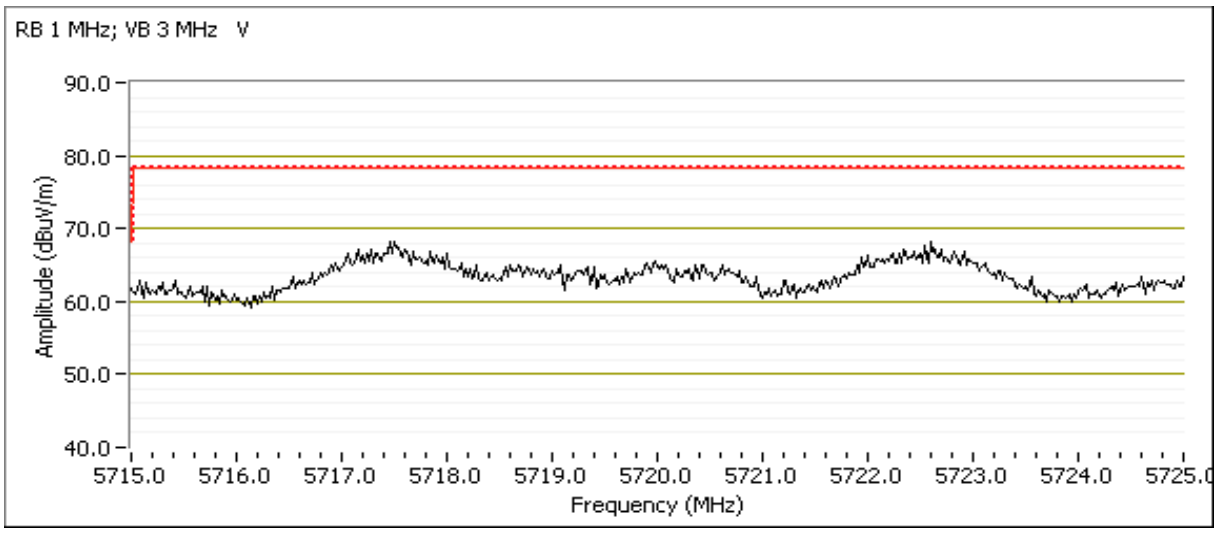
Frequency	Level	Pol	15.E		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5692.210	67.9	V	68.3	**-0.4**	PK	22	2.08	
5712.540	56.5	V	54.0	2.5	Avg	22	2.08	Vavg:100; RB 1 MHz; VB: 3 kHz



Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A

5715-5725 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	15.E		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5722.270	67.2	V	78.3	**-11.1**	PK	25	1.97	

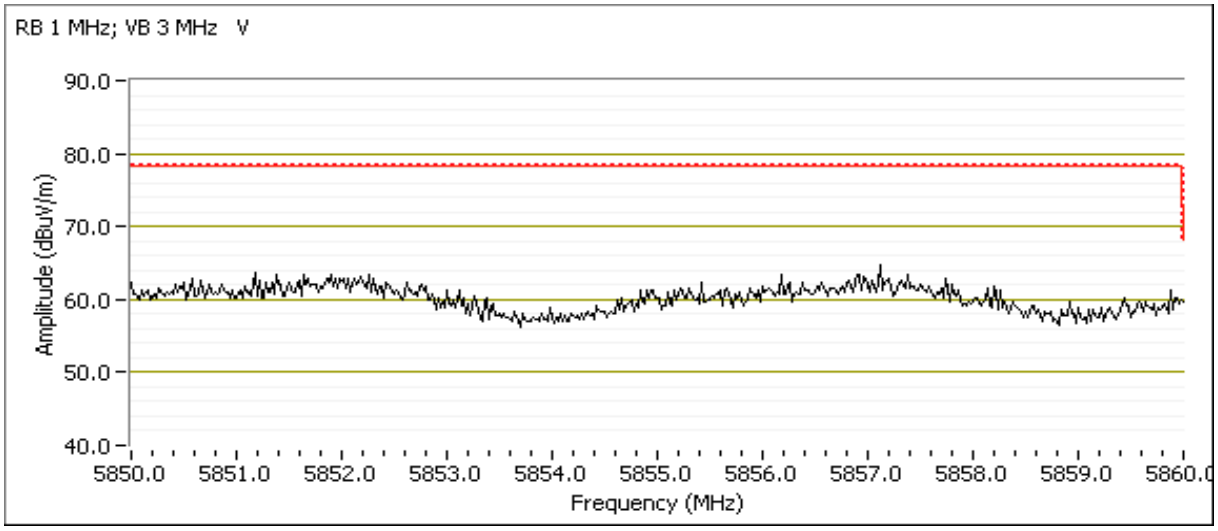


Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A

Channel: 155 - 5785MHz Mode: ac80 Setting: 8
Tx Chain: 4Tx (txchain 0xf) Data Rate: VHT0

5850 MHz Band Edge Signal Radiated Field Strength

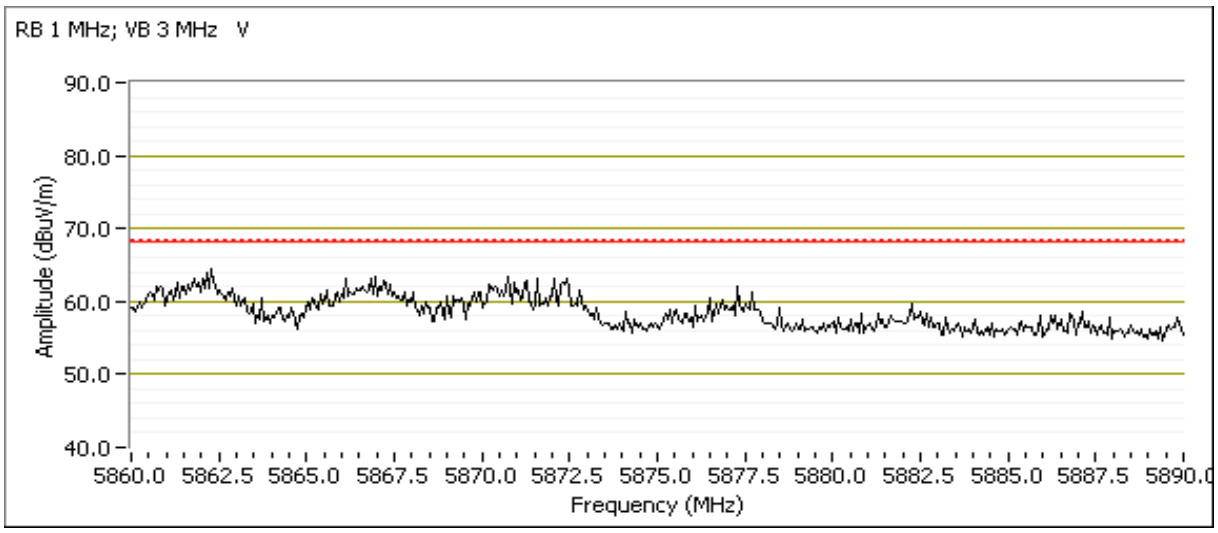
Frequency	Level	Pol	15.E		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5854.970	64.0	V	78.3	**-14.3**	PK	55	1.81	



Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A

5860 MHz Band Edge Signal Radiated Field Strength

Frequency	Level	Pol	15.E		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5870.400	64.2	V	68.3	**-4.1**	PK	51	1.50	



Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A

Test Configuration Photographs

Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A

Test Configuration Photographs

Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A

RSS 247 and FCC 15.407 (UNII) Radiated Spurious Emissions

Test Specific Details

Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the specification listed above.

General Test Configuration

The EUT and all local support equipment were located on the turntable for radiated spurious emissions testing.
For radiated emissions testing the measurement antenna was located 3 meters from the EUT, unless otherwise noted.

Ambient Conditions:

Temperature: 20-22 °C
Rel. Humidity: 30-35 %

Summary of Results

Run #	Mode	Channel	Power Setting	Measured Power	Test Performed	Limit	Result / Margin
Scans on "center" channel in all OFDM modes to determine the worst case mode.							
1	a	40 - 5200MHz	16	16	Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15 E	Emissions are not radio related.
	HT20	40 - 5200MHz	16	16	Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15 E	Emissions are not radio related.
	HT40	38 - 5190MHz	15	15	Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15 E	Emissions are not radio related.
	ac80	42 - 5210MHz	14	11	Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15 E	53.3 dBµV/m @ 5000.8 MHz (-0.7 dB)
Measurements on low and high channels in worst-case OFDM mode.							
2	a	36 - 5180MHz	16	16	Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15 E	Emissions are not radio related.
	a	48 - 5240MHz	16	16	Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15 E	Emissions are not radio related.

Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A

Run #	Mode	Channel	Power Setting	Measured Power	Test Performed	Limit	Result / Margin
Scans on "center" channel in all OFDM modes to determine the worst case mode.							
7	a	157 - 5785MHz	16	16	Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15 E	Emissions are not radio related.
	HT20	157 - 5785MHz	14	14	Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15 E	Emissions are not radio related.
	HT40	151 - 5755MHz	14	14	Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15 E	Emissions are not radio related.
	ac80	155 - 5775MHz	13	13	Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15 E	Emissions are not radio related.
Measurements on low and high channels in worst-case OFDM mode.							
8	a	149 - 5745MHz	16	16	Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15 E	58.8 dBµV/m @ 17217.7 MHz (-9.5 dB)
	a	165 - 5825MHz	16	16	Radiated Emissions, 1 - 40 GHz	FCC 15.209 / 15 E	59.8 dBµV/m @ 17478.4 MHz (-8.5 dB)

Modifications Made During Testing

No modifications were made to the EUT during testing

Deviations From The Standard

No deviations were made from the requirements of the standard.

Procedure Comments:

Measurements performed in accordance with FCC KDB 789033
Peak measurements performed with: RBW=1MHz, VBW=3MHz, peak detector, max hold, auto sweep time
EUT operated at the maximum 1Tx power setting

Mode	Data Rate	Duty Cycle (x)	Constant DC?	T (ms)	Pwr Cor Factor*	Lin Volt Cor Factor**	Min VBW for FS (Hz)
11a	6Mb/s	0.91	Yes	0.273	0.40	0.79	3663
n20	MCS0	0.99	Yes	1.906	0.00	0.00	10
n40	MCS0	0.96	Yes	0.922	0.18	0.36	1085
ac80	VHT0	0.50	Yes	0.47	3.01	6.02	2128

Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A

Sample Notes

Sample S/N: BET3716XRU20121
Driver: 10.10 RC69.10
Antenna: Integral (4x4)

Measurement Specific Notes:

Note 1:	For emissions outside of the restricted bands the limit is -27dBm/MHz eirp (68.3dBuV/m). The measurement method required is a peak measurement (RB=1MHz, VB≥3MHz, peak detector). Per KDB 789033, compliance can be demonstrated by meeting the average and peak limits of 15.209, as an alternative.
Note 2:	Emission has duty cycle ≥ 98%, average measurement performed: RBW=1MHz, VBW=3MHz, RMS, Power averaging, auto sweep, trace average 100 traces
Note 4:	Emission has duty cycle < 98% and is NOT constant, average measurement performed: RBW=1MHz, VBW> 1/T, peak detector, linear average mode, sweep time auto, max hold. Max hold for 50*(1/DC) traces
Note 5:	Emission has duty cycle < 98%, but constant, average measurement performed: RBW=1MHz, VBW=3MHz, RMS, Power averaging, auto sweep, trace average 100 * 1/DC traces, measurement corrected by Pwr correction factor
Note 6:	Plots of the average and peak bandedge do not account for any duty cycle correction. Refer to the tabular results for final measurements.

Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A

Run #1, Radiated Spurious Emissions, 1,000 - 40,000 MHz. Operation in the 5150-5250 MHz Band

Date of Test: 9/28/2015 Config. Used: 1
Test Engineer: Deniz Demirci Config Change: None
Test Location: FT Ch #5 Host Unit Voltage POE

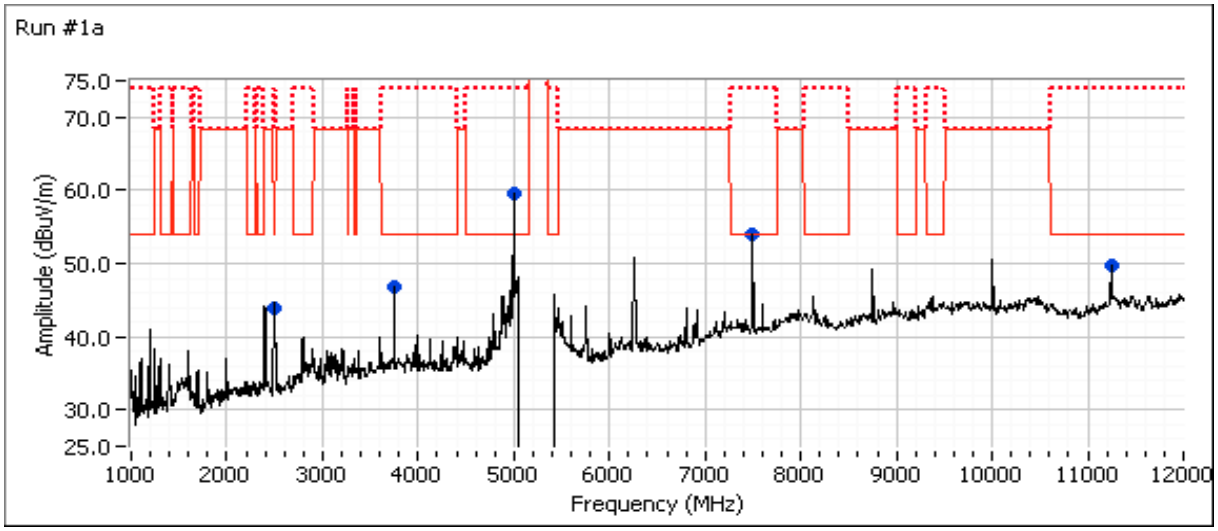
Run #1a-1: Center Channel

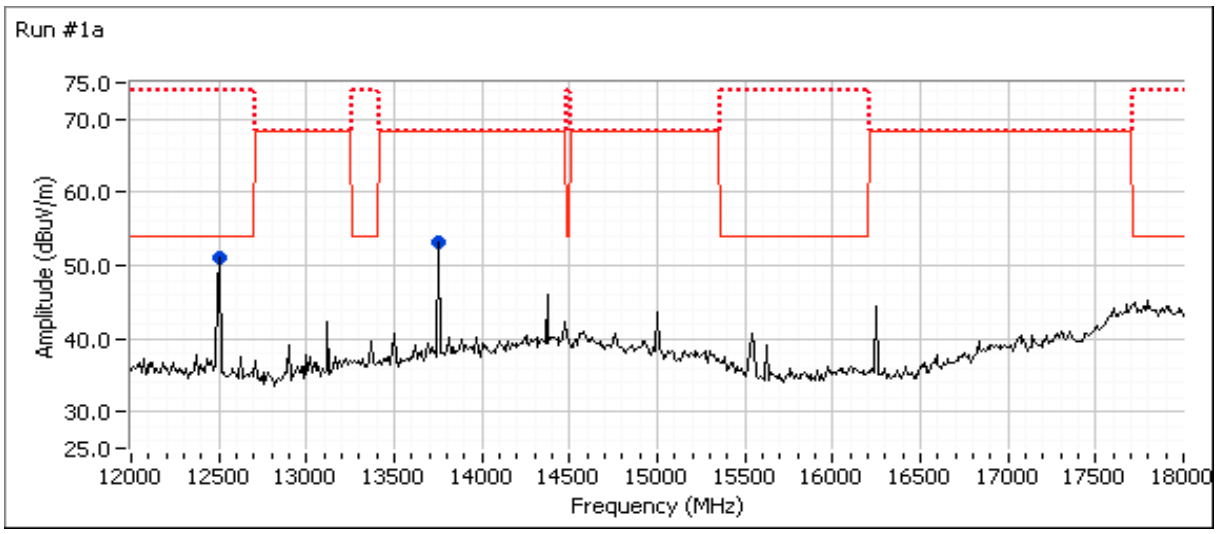
Channel: 40 Mode: a
Tx Chain: 4Tx (txchain 0xf) Data Rate: 6 Mbps

Frequency	Level	Pol	15.209 / 15E		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
3749.990	44.9	V	54.0	-9.1	AVG	222	1.5	RB 1 MHz;VB 10 Hz;Peak
3749.860	50.2	V	74.0	-23.8	PK	222	1.5	RB 1 MHz;VB 3 MHz;Peak
2485.920	29.1	V	54.0	-24.9	AVG	159	1.5	RB 1 MHz;VB 10 Hz;Peak
2485.510	41.9	V	74.0	-32.1	PK	159	1.5	RB 1 MHz;VB 3 MHz;Peak
4999.980	59.5	V	54.0	**5.5**	AVG	26	1.2	RB 1 MHz;VB 10 Hz;Peak
4999.950	61.6	V	74.0	-12.4	PK	26	1.2	RB 1 MHz;VB 3 MHz;Peak
11249.830	47.2	V	54.0	-6.8	AVG	93	1.4	RB 1 MHz;VB 10 Hz;Peak
11250.230	55.8	V	74.0	-18.2	PK	93	1.4	RB 1 MHz;VB 3 MHz;Peak
7500.000	54.2	V	54.0	**0.2**	AVG	239	1.2	RB 1 MHz;VB 10 Hz;Peak
7500.000	58.0	V	74.0	-16.0	PK	239	1.2	RB 1 MHz;VB 3 MHz;Peak
13749.940	56.5	V	68.3	-11.8	PK	272	1.5	RB 1 MHz;VB 3 MHz;Peak
12499.900	51.4	V	54.0	-2.6	AVG	260	1.5	RB 1 MHz;VB 10 Hz;Peak
12499.880	54.2	V	74.0	-19.8	PK	260	1.5	RB 1 MHz;VB 3 MHz;Peak

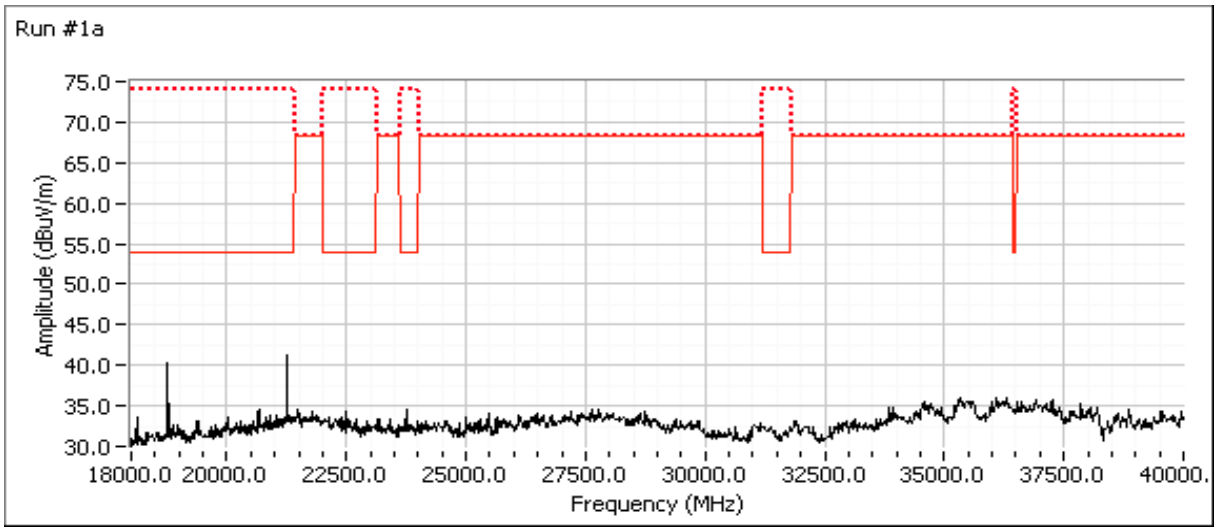
Note 1:	All emissions above are narrow band signals with no duty cycle.
Note 2:	For emissions in restricted bands, the limit of 15.209 was used which requires average and peak measurements.
Note 3:	For emissions outside of the restricted bands the limit is -27dBm/MHz eirp (68.3dBuV/m). The measurement method required is a peak measurement (RB=1MHz, VB≥3MHz, peak detector).

Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A





Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A



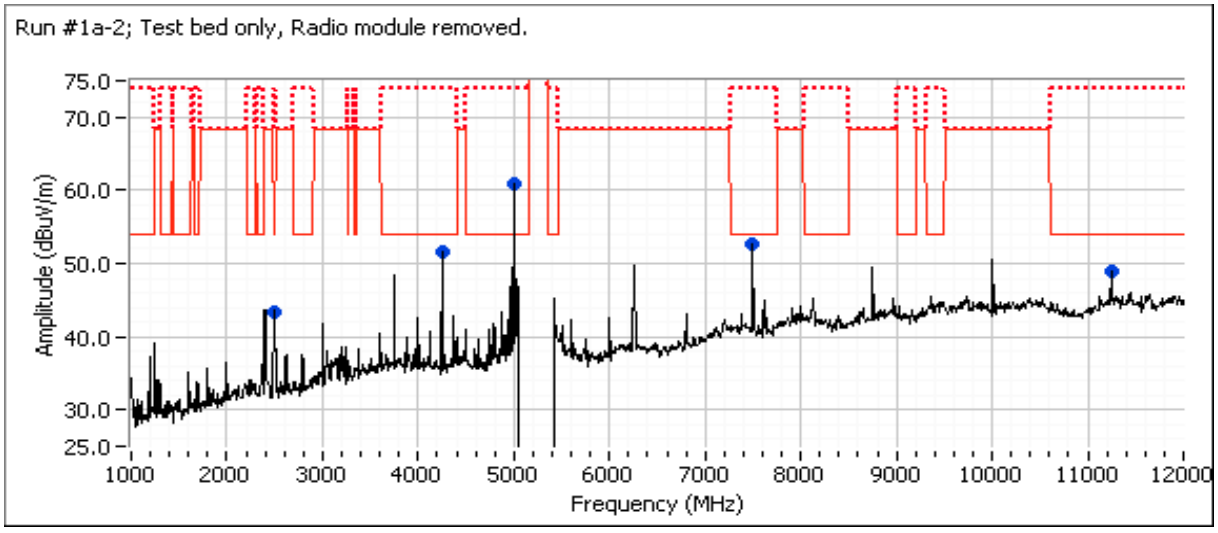
Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A

Run #1a-2: Center Channel

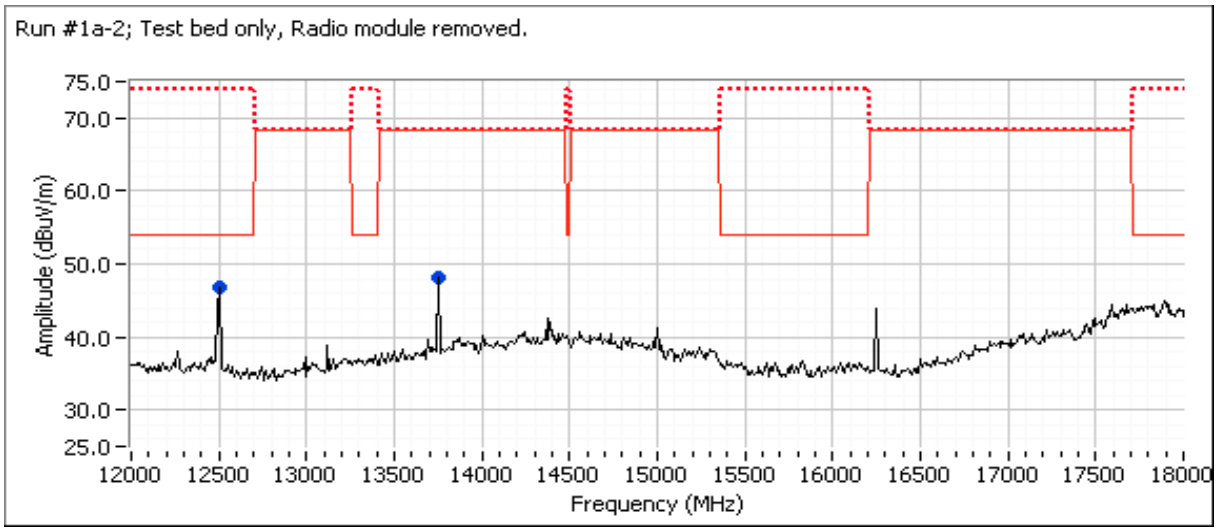
Channel: N/A Mode: N/A
Tx Chain: N/A Data Rate: N/A

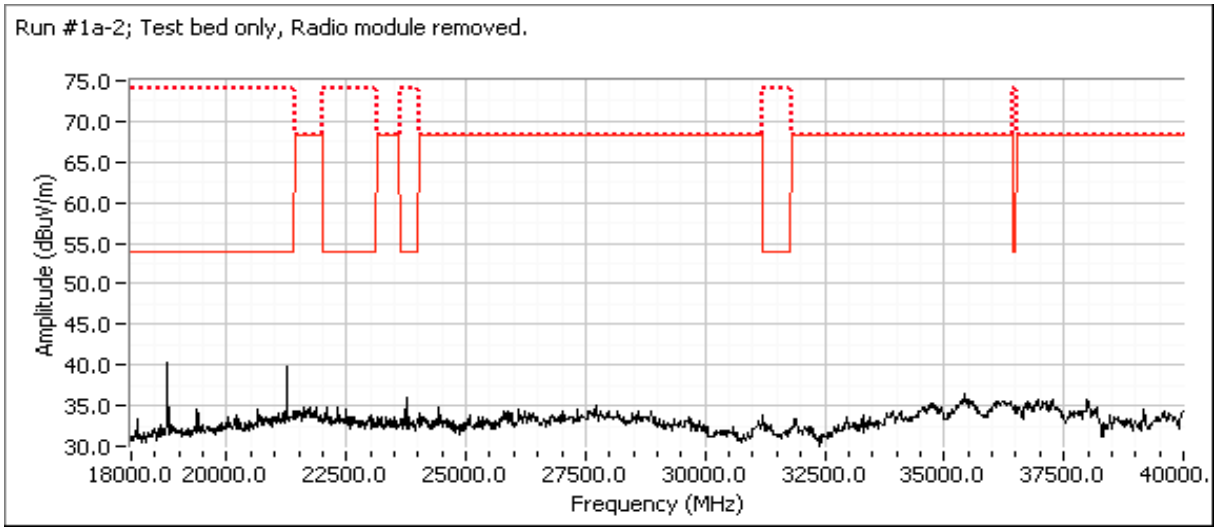
Test bed only, Radio module removed.

Frequency	Level	Pol	15.209 / 15E		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
4249.990	52.1	V	54.0	-1.9	AVG	251	1.7	RB 1 MHz;VB 10 Hz;Peak
4250.010	54.6	V	74.0	-19.4	PK	251	1.7	RB 1 MHz;VB 3 MHz;Peak
4999.970	60.9	V	54.0	**6.9**	AVG	25	1.8	RB 1 MHz;VB 10 Hz;Peak
5000.010	62.1	V	74.0	-11.9	PK	25	1.8	RB 1 MHz;VB 3 MHz;Peak
2499.980	43.2	H	54.0	-10.8	AVG	28	1.9	RB 1 MHz;VB 10 Hz;Peak
2499.900	47.9	H	74.0	-26.1	PK	28	1.9	RB 1 MHz;VB 3 MHz;Peak
7499.950	51.8	V	54.0	-2.2	AVG	244	1.0	RB 1 MHz;VB 10 Hz;Peak
7500.040	56.5	V	74.0	-17.5	PK	244	1.0	RB 1 MHz;VB 3 MHz;Peak
11249.900	47.1	V	54.0	-6.9	AVG	113	1.6	RB 1 MHz;VB 10 Hz;Peak
11249.910	55.6	V	74.0	-18.4	PK	113	1.6	RB 1 MHz;VB 3 MHz;Peak
12499.910	50.1	V	54.0	-3.9	AVG	269	1.4	RB 1 MHz;VB 10 Hz;Peak
12499.540	53.7	V	74.0	-20.3	PK	269	1.4	RB 1 MHz;VB 3 MHz;Peak
13750.010	56.7	V	68.3	-11.6	PK	270	1.4	RB 1 MHz;VB 3 MHz;Peak
Note:	All emissions above are narrow band signals with no duty cycle.							



Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A





Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A

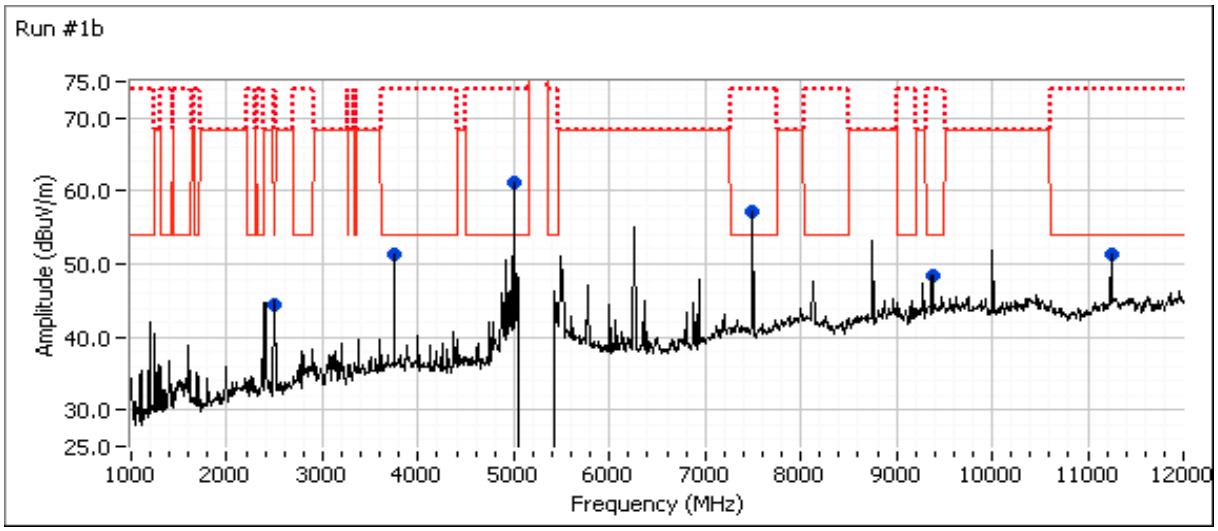
Run #1b: Center Channel

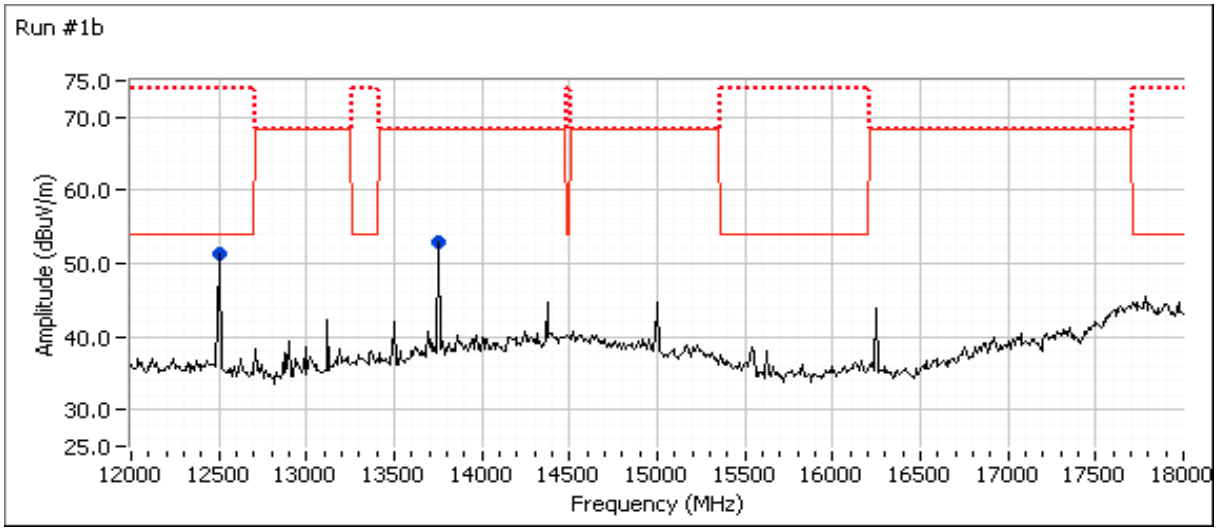
Channel: 40 Mode: HT20
Tx Chain: 4Tx (txchain 0xf) Data Rate: MCS0

Frequency	Level	Pol	15.209 / 15E		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
7499.950	57.5	V	54.0	3.5	AVG	230	1.0	RB 1 MHz;VB 10 Hz;Peak
7499.930	60.1	V	74.0	-13.9	PK	230	1.0	RB 1 MHz;VB 3 MHz;Peak
9374.900	47.2	V	54.0	-6.8	AVG	239	1.2	RB 1 MHz;VB 10 Hz;Peak
9374.970	54.8	V	74.0	-19.2	PK	239	1.2	RB 1 MHz;VB 3 MHz;Peak
11249.890	50.1	V	54.0	-3.9	AVG	112	1.5	RB 1 MHz;VB 10 Hz;Peak
11249.790	56.9	V	74.0	-17.1	PK	112	1.5	RB 1 MHz;VB 3 MHz;Peak
4999.980	60.9	V	54.0	6.9	AVG	26	1.8	RB 1 MHz;VB 10 Hz;Peak
4999.970	62.5	V	74.0	-11.5	PK	26	1.8	RB 1 MHz;VB 3 MHz;Peak
2499.980	42.2	H	54.0	-11.8	AVG	20	1.9	RB 1 MHz;VB 10 Hz;Peak
2500.030	47.0	H	68.3	-21.3	PK	20	1.9	RB 1 MHz;VB 3 MHz;Peak
4250.010	36.7	V	54.0	-17.3	AVG	234	1.4	RB 1 MHz;VB 10 Hz;Peak
4249.640	46.2	V	74.0	-27.8	PK	234	1.4	RB 1 MHz;VB 3 MHz;Peak
12499.870	51.1	V	54.0	-2.9	AVG	260	1.3	RB 1 MHz;VB 10 Hz;Peak
12499.730	54.3	V	74.0	-19.7	PK	260	1.3	RB 1 MHz;VB 3 MHz;Peak
13749.900	56.1	V	68.3	-12.2	PK	270	1.5	RB 1 MHz;VB 3 MHz;Peak

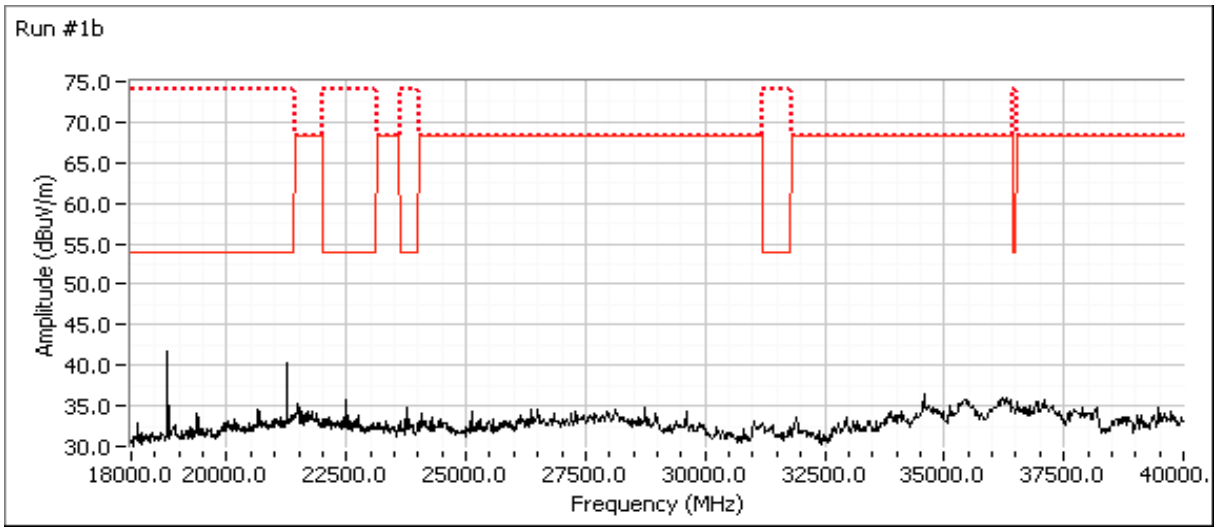
Note 1:	All emissions above are narrow band signals with no duty cycle.
Note 2:	For emissions in restricted bands, the limit of 15.209 was used which requires average and peak measurements.
Note 3:	For emissions outside of the restricted bands the limit is -27dBm/MHz eirp (68.3dBuV/m). The measurement method required is a peak measurement (RB=1MHz, VB≥3MHz, peak detector).

Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A





Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A



Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A

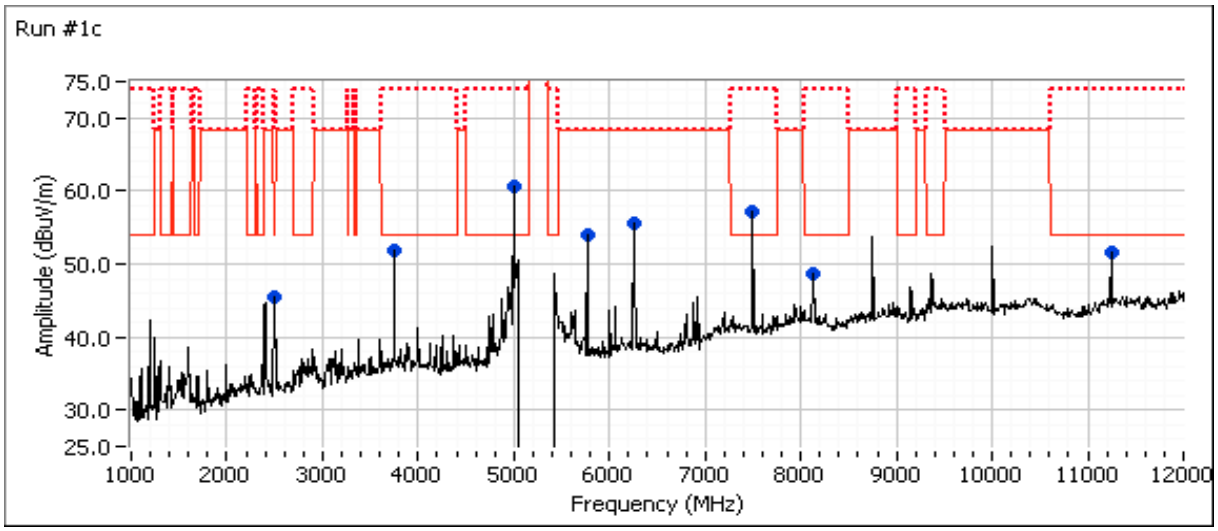
Run #1c: Center Channel

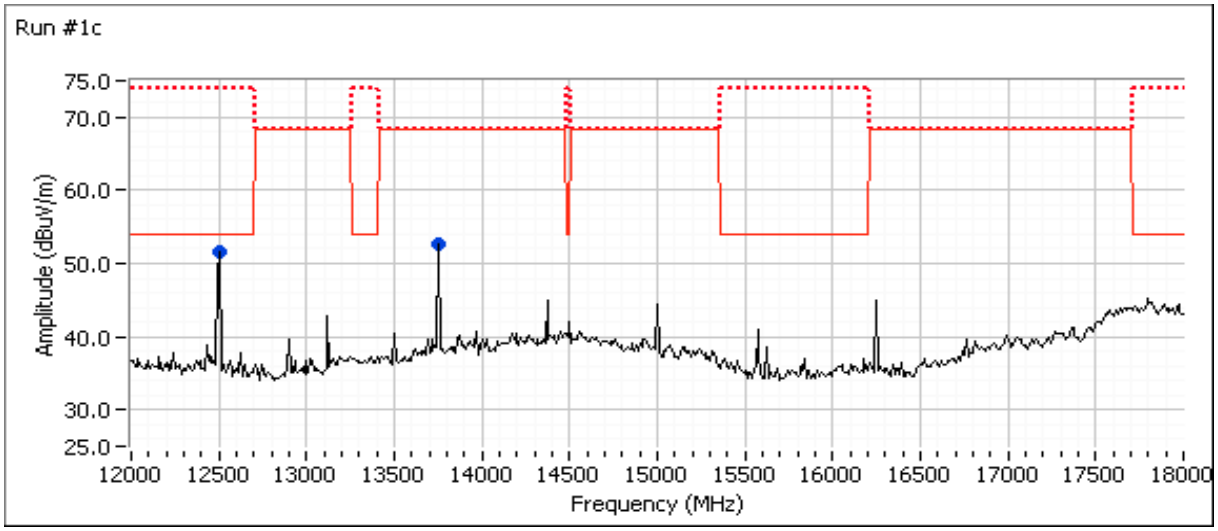
Channel: 38 Mode: 11HT40
Tx Chain: 4Tx (txchain 0xf) Data Rate: MCS0

Frequency	Level	Pol	15.209 / 15E		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5000.000	60.8	V	54.0	6.8	AVG	27	2.0	RB 1 MHz;VB 10 Hz;Peak
4999.900	64.0	V	74.0	-10.0	PK	27	2.0	RB 1 MHz;VB 3 MHz;Peak
5766.730	53.5	V	68.3	-14.8	AVG	341	1.6	RB 1 MHz;VB 10 Hz;Peak
5766.680	57.9	V	68.3	-10.4	PK	341	1.6	RB 1 MHz;VB 3 MHz;Peak
3749.980	50.9	V	54.0	-3.1	AVG	227	1.5	RB 1 MHz;VB 10 Hz;Peak
3749.910	54.1	V	74.0	-19.9	PK	227	1.5	RB 1 MHz;VB 3 MHz;Peak
2500.010	44.7	V	68.3	-23.6	AVG	129	1.3	RB 1 MHz;VB 10 Hz;Peak
2499.950	48.8	V	74.0	-25.2	PK	129	1.3	RB 1 MHz;VB 3 MHz;Peak
6250.070	57.4	V	68.3	-10.9	PK	219	1.5	RB 1 MHz;VB 3 MHz;Peak
7499.930	57.0	V	54.0	3.0	AVG	231	1.3	RB 1 MHz;VB 10 Hz;Peak
7499.910	60.0	V	74.0	-14.0	PK	231	1.3	RB 1 MHz;VB 3 MHz;Peak
8124.910	47.2	V	54.0	-6.8	AVG	247	1.0	RB 1 MHz;VB 10 Hz;Peak
8124.920	54.1	V	74.0	-19.9	PK	247	1.0	RB 1 MHz;VB 3 MHz;Peak
11249.830	49.4	V	54.0	-4.6	AVG	100	2.0	RB 1 MHz;VB 10 Hz;Peak
11249.860	56.4	V	74.0	-17.6	PK	100	2.0	RB 1 MHz;VB 3 MHz;Peak
13749.810	56.8	V	68.3	-11.5	PK	267	1.5	RB 1 MHz;VB 3 MHz;Peak
12499.860	51.7	V	54.0	-2.3	AVG	259	1.4	RB 1 MHz;VB 10 Hz;Peak
12499.890	54.4	V	74.0	-19.6	PK	259	1.4	RB 1 MHz;VB 3 MHz;Peak

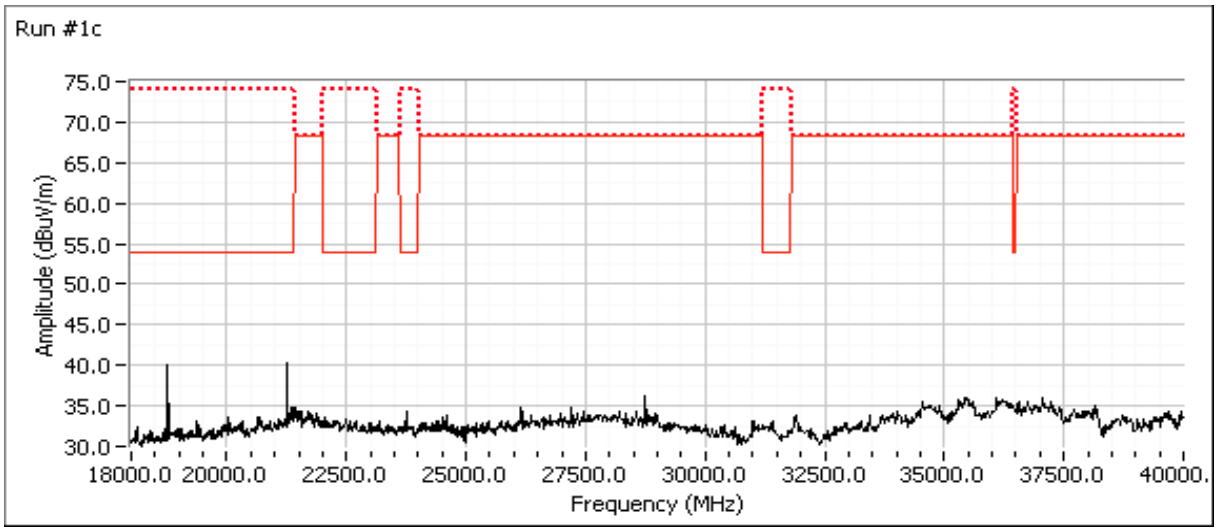
Note 1:	All emissions above are narrow band signals with no duty cycle.
Note 2:	For emissions in restricted bands, the limit of 15.209 was used which requires average and peak measurements.
Note 3:	For emissions outside of the restricted bands the limit is -27dBm/MHz eirp (68.3dBuV/m). The measurement method required is a peak measurement (RB=1MHz, VB≥3MHz, peak detector).

Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A





Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A



Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A

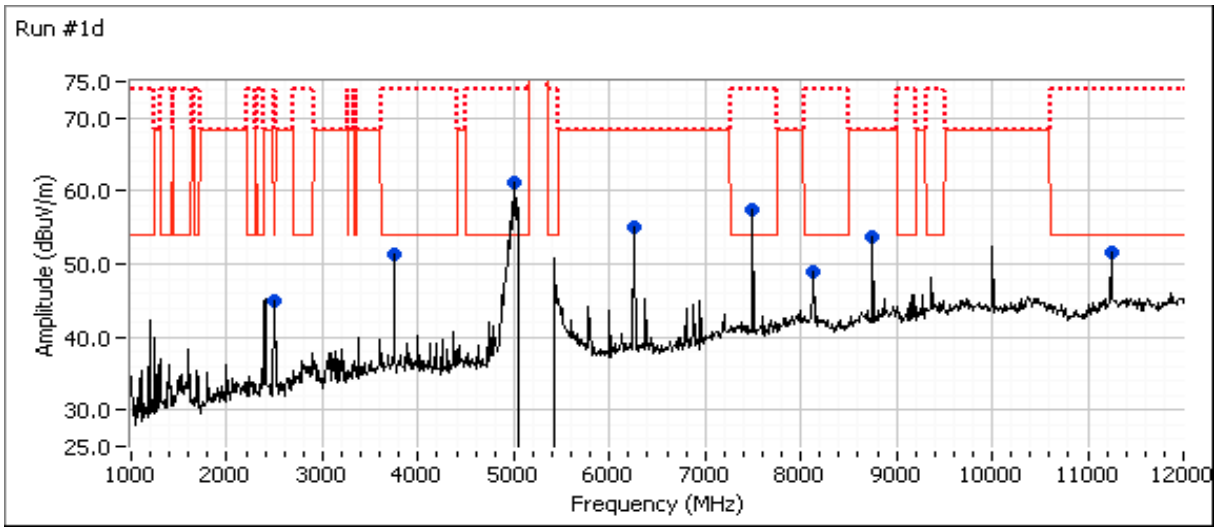
Run #1d: Center Channel

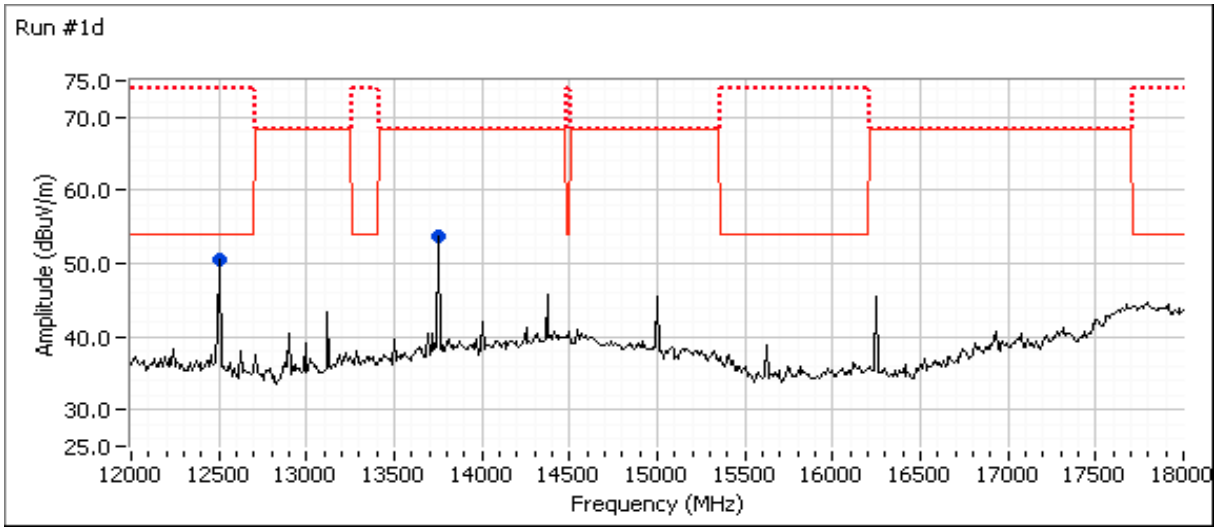
Channel: 42 Mode: ac80
Tx Chain: 4Tx (txchain 0xf) Data Rate: VHT0

Frequency	Level	Pol	15.209 / 15E		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5000.800	53.3	V	54.0	-0.7	AVG	27	2.0	RB 1 MHz;VB 3 kHz;Peak
5000.840	59.7	V	74.0	-14.3	PK	27	2.0	RB 1 MHz;VB 3 MHz;Peak
			0.0	0.0				
2500.070	48.5	V	68.3	-19.8	PK	129	1.2	RB 1 MHz;VB 3 MHz;Peak
3749.990	50.6	V	54.0	-3.4	AVG	213	1.3	RB 1 MHz;VB 10 Hz;Peak
3749.920	54.0	V	74.0	-20.0	PK	213	1.3	RB 1 MHz;VB 3 MHz;Peak
4999.970	60.8	V	54.0	6.8	AVG	28	2.0	RB 1 MHz;VB 10 Hz;Peak
5000.040	67.2	V	74.0	-6.8	PK	28	2.0	RB 1 MHz;VB 3 MHz;Peak
6249.980	57.1	V	68.3	-11.2	PK	225	1.1	RB 1 MHz;VB 3 MHz;Peak
7499.910	56.8	V	54.0	2.8	AVG	245	1.1	RB 1 MHz;VB 10 Hz;Peak
7500.040	59.6	V	74.0	-14.4	PK	245	1.1	RB 1 MHz;VB 3 MHz;Peak
8124.950	46.8	V	54.0	-7.2	AVG	248	1.0	RB 1 MHz;VB 10 Hz;Peak
8124.820	54.1	V	74.0	-19.9	PK	248	1.0	RB 1 MHz;VB 3 MHz;Peak
8750.000	57.2	V	68.3	-11.1	PK	105	1.3	RB 1 MHz;VB 3 MHz;Peak
11249.880	50.3	V	54.0	-3.7	AVG	115	1.5	RB 1 MHz;VB 10 Hz;Peak
11249.680	57.0	V	74.0	-17.0	PK	115	1.5	RB 1 MHz;VB 3 MHz;Peak
12499.900	48.7	V	54.0	-5.3	AVG	216	1.6	RB 1 MHz;VB 10 Hz;Peak
12499.840	52.3	V	74.0	-21.7	PK	216	1.6	RB 1 MHz;VB 3 MHz;Peak
13750.020	56.8	V	68.3	-11.5	PK	257	1.5	RB 1 MHz;VB 3 MHz;Peak
			0.0	0.0				
5000.500	57.5	V	54.0	**3.5**	AVG	27	2.0	RB 1 MHz;VB 3 kHz;Pea P 14
5000.540	66.4	V	74.0	-7.6	PK	27	2.0	RB 1 MHz;VB 3 MHz;Pe P 14

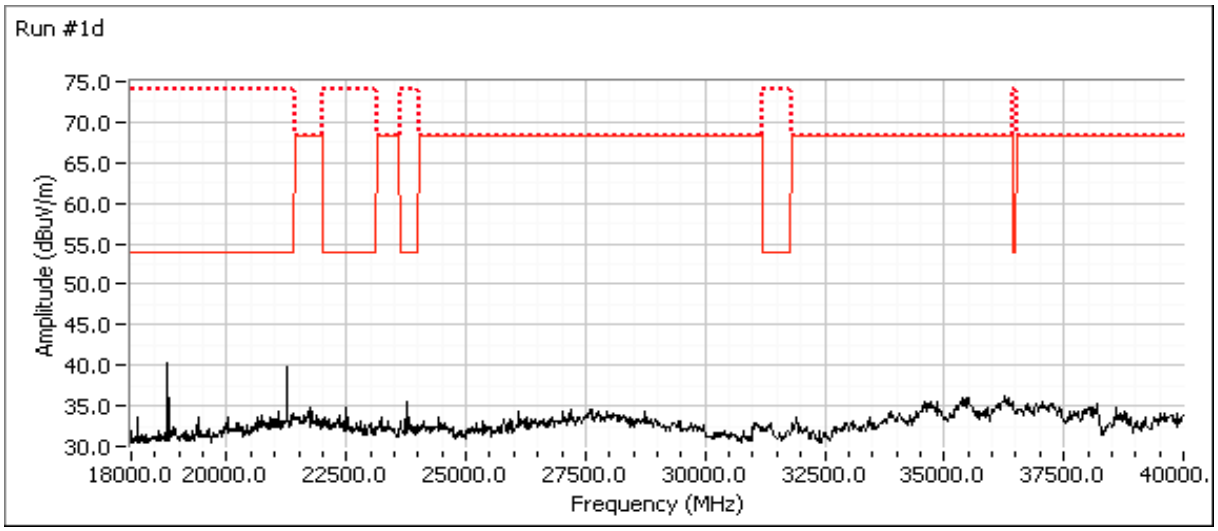
Note 1:	All emissions above are narrow band signals with no duty cycle.
Note 2:	For emissions in restricted bands, the limit of 15.209 was used which requires average and peak measurements.
Note 3:	For emissions outside of the restricted bands the limit is -27dBm/MHz eirp (68.3dBuV/m). The measurement method required is a peak measurement (RB=1MHz, VB≥3MHz, peak detector).

Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A





Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A



Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A

Run #2: Radiated Spurious Emissions, 1,000 - 40000 MHz. Operating Mode: Worse case from Run #1

Date of Test: 9/30/2015, 10/1/2015 Config. Used: 1
Test Engineer: Deniz Demirci Config Change: None
Test Location: FT Ch #4, Ch #5 Host Unit Voltage POE

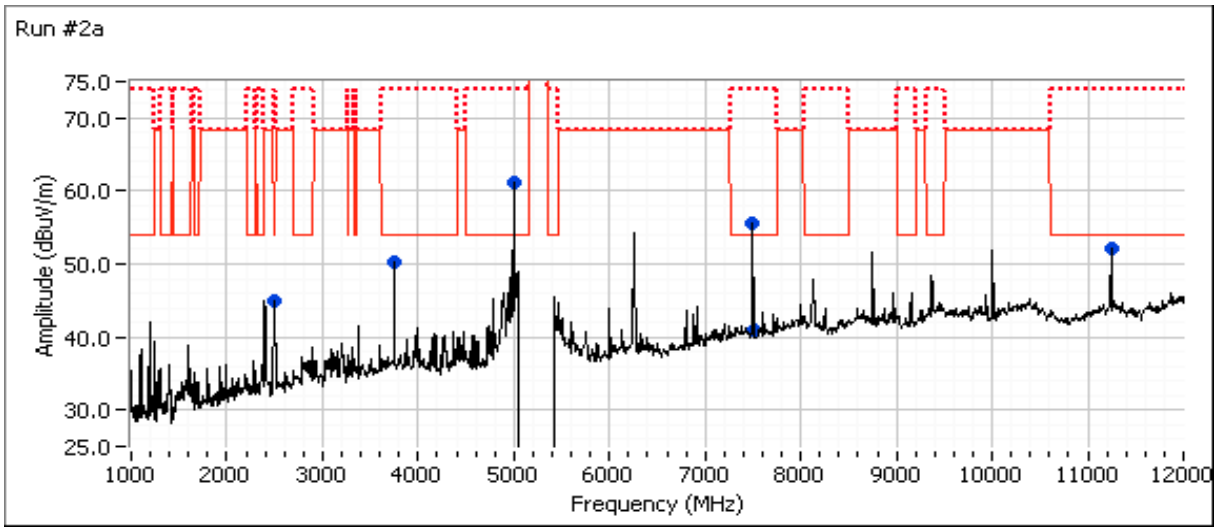
Run #2a: Low Channel

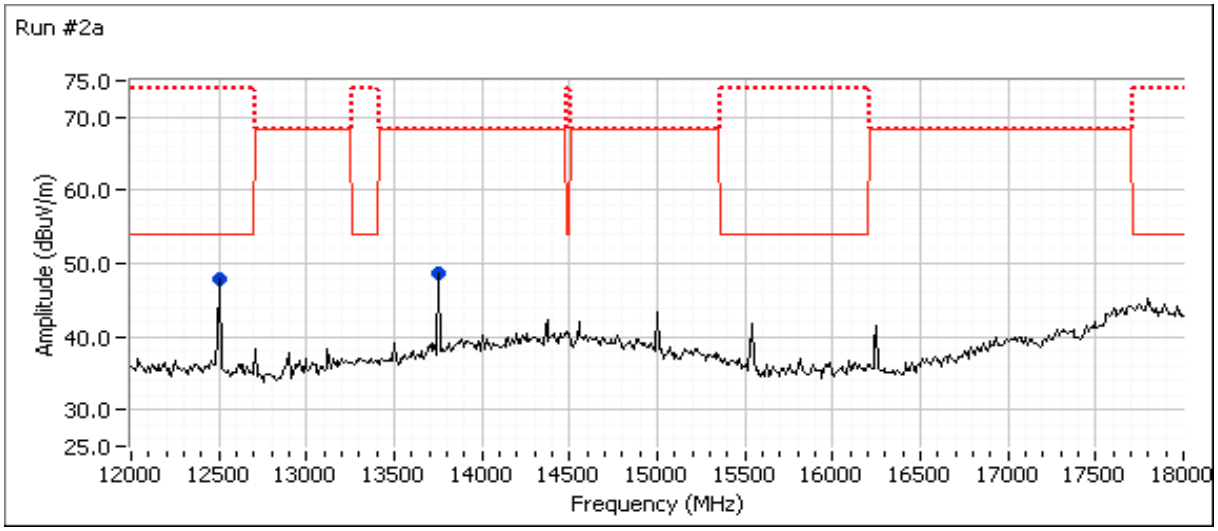
Channel: 36 Mode: a
Tx Chain: 4Tx (txchain 0xf) Data Rate: 6 Mbps

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
7499.950	55.8	V	54.0	1.8	AVG	244	1.0	RB 1 MHz;VB 10 Hz;Peak
7499.930	58.9	V	74.0	-15.1	PK	244	1.0	RB 1 MHz;VB 3 MHz;Peak
11249.880	51.8	V	54.0	-2.2	AVG	112	1.4	RB 1 MHz;VB 10 Hz;Peak
11249.660	57.6	V	74.0	-16.4	PK	112	1.4	RB 1 MHz;VB 3 MHz;Peak
5000.000	61.7	V	54.0	7.7	AVG	26	1.6	RB 1 MHz;VB 10 Hz;Peak
4999.950	63.7	V	74.0	-10.3	PK	26	1.6	RB 1 MHz;VB 3 MHz;Peak
3749.980	49.2	V	54.0	-4.8	AVG	234	1.1	RB 1 MHz;VB 10 Hz;Peak
3750.160	53.7	V	74.0	-20.3	PK	234	1.1	RB 1 MHz;VB 3 MHz;Peak
2499.980	45.1	H	54.0	-8.9	AVG	108	1.0	RB 1 MHz;VB 10 Hz;Peak
2499.950	49.0	H	74.0	-25.0	PK	108	1.0	RB 1 MHz;VB 3 MHz;Peak
13749.670	53.8	V	68.3	-14.5	PK	260	1.5	RB 1 MHz;VB 3 MHz;Peak
12499.920	48.2	V	54.0	-5.8	AVG	122	1.5	RB 1 MHz;VB 10 Hz;Peak
12499.890	52.6	V	74.0	-21.4	PK	122	1.5	RB 1 MHz;VB 3 MHz;Peak

Note 1:	All emissions above are narrow band signals with no duty cycle.
Note 2:	For emissions in restricted bands, the limit of 15.209 was used which requires average and peak measurements.
Note 3:	For emissions outside of the restricted bands the limit is -27dBm/MHz eirp (68.3dBuV/m). The measurement method required is a peak measurement (RB=1MHz, VB≥3MHz, peak detector).
Note 4:	Scans made between 18 - 40 GHz with the measurement antenna moved around the card and its antennas 20-50cm from the device indicated there were no significant emissions in this frequency range other than the test bed emissions.

Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A





Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A

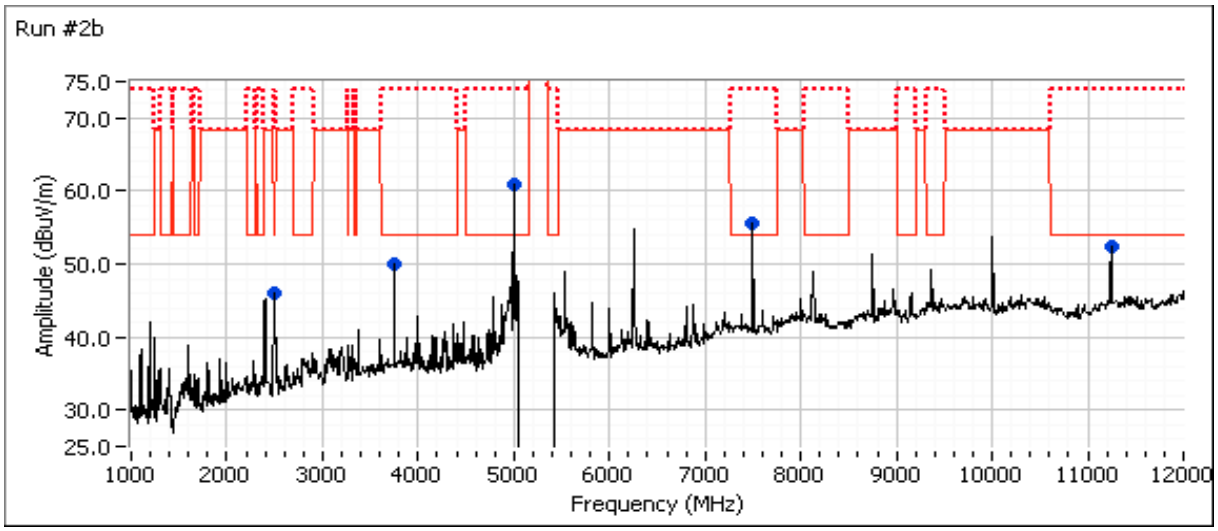
Run #2b: High Channel

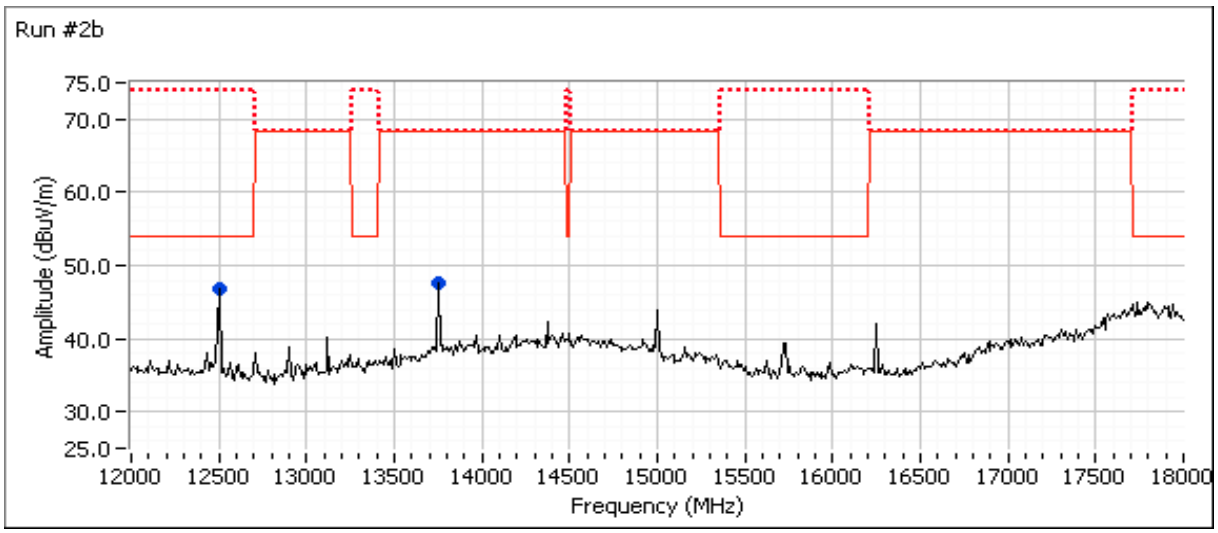
Channel: 48 Mode: a
Tx Chain: 4Tx (txchain 0xf) Data Rate: 6 Mbps

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2499.970	44.5	V	54.0	-9.5	AVG	130	1.5	RB 1 MHz;VB 10 Hz;Peak
2499.960	48.5	V	74.0	-25.5	PK	130	1.5	RB 1 MHz;VB 3 MHz;Peak
3749.990	49.0	V	54.0	-5.0	AVG	236	2.0	RB 1 MHz;VB 10 Hz;Peak
3750.040	53.0	V	74.0	-21.0	PK	236	2.0	RB 1 MHz;VB 3 MHz;Peak
4999.990	61.5	V	54.0	7.5	AVG	31	1.7	RB 1 MHz;VB 10 Hz;Peak
4999.970	63.1	V	74.0	-10.9	PK	31	1.7	RB 1 MHz;VB 3 MHz;Peak
7499.930	56.3	V	54.0	2.3	AVG	242	1.0	RB 1 MHz;VB 10 Hz;Peak
7499.940	59.3	V	74.0	-14.7	PK	242	1.0	RB 1 MHz;VB 3 MHz;Peak
11249.910	52.1	V	54.0	-1.9	AVG	108	1.5	RB 1 MHz;VB 10 Hz;Peak
11249.780	58.2	V	74.0	-15.8	PK	108	1.5	RB 1 MHz;VB 3 MHz;Peak
12499.890	48.0	V	54.0	-6.0	AVG	220	1.4	RB 1 MHz;VB 10 Hz;Peak
12500.080	52.5	V	74.0	-21.5	PK	220	1.4	RB 1 MHz;VB 3 MHz;Peak
13750.220	54.4	V	68.3	-13.9	PK	103	1.5	RB 1 MHz;VB 3 MHz;Peak

Note 1:	All emissions above are narrow band signals with no duty cycle.
Note 2:	For emissions in restricted bands, the limit of 15.209 was used which requires average and peak measurements.
Note 3:	For emissions outside of the restricted bands the limit is -27dBm/MHz eirp (68.3dBuV/m). The measurement method required is a peak measurement (RB=1MHz, VB≥3MHz, peak detector).
Note 4:	Scans made between 18 - 40 GHz with the measurement antenna moved around the card and its antennas 20-50cm from the device indicated there were no significant emissions in this frequency range other than the test bed emissions.

Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A





Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A

Run #7, Radiated Spurious Emissions, 1,000 - 40,000 MHz. Operation in the 5725-5850 MHz Band

Date of Test: 9/30/2015, 10/1/2015 Config. Used: 1
Test Engineer: Deniz Demirci Config Change: None
Test Location: FT Ch #4, Ch #5 Host Unit Voltage POE

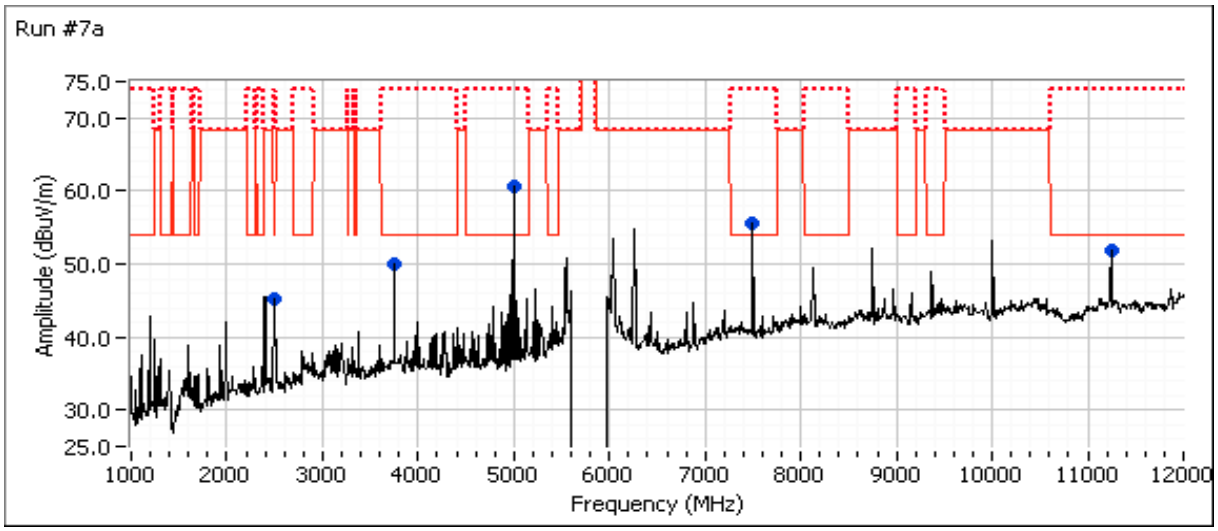
Run #7a: Center Channel

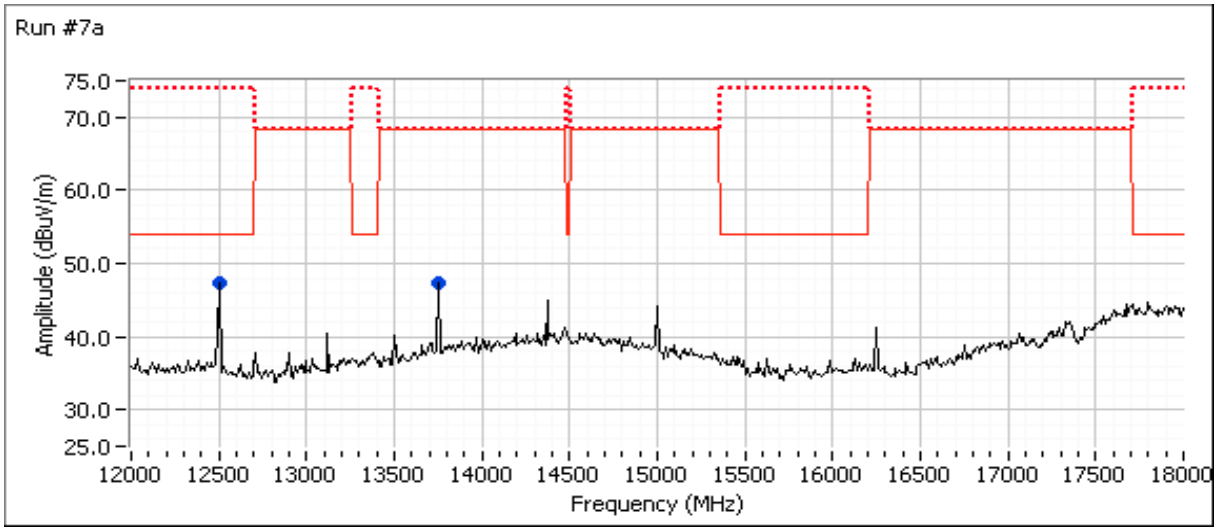
Channel: 157 Mode: a
Tx Chain: 4Tx (txchain 0xf) Data Rate: 6 Mbps

Frequency	Level	Pol	15.209 / 15E		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
4999.990	61.1	V	54.0	7.1	AVG	31	1.7	RB 1 MHz;VB 10 Hz;Peak
5000.000	62.2	V	74.0	-11.8	PK	31	1.7	RB 1 MHz;VB 3 MHz;Peak
3750.040	49.6	V	54.0	-4.4	AVG	245	1.5	RB 1 MHz;VB 10 Hz;Peak
3750.090	53.3	V	74.0	-20.7	PK	245	1.5	RB 1 MHz;VB 3 MHz;Peak
2499.970	44.2	V	54.0	-9.8	AVG	132	1.5	RB 1 MHz;VB 10 Hz;Peak
2499.950	48.5	V	74.0	-25.5	PK	132	1.5	RB 1 MHz;VB 3 MHz;Peak
7500.000	55.9	V	54.0	1.9	AVG	240	1.0	RB 1 MHz;VB 10 Hz;Peak
7500.000	58.9	V	74.0	-15.1	PK	240	1.0	RB 1 MHz;VB 3 MHz;Peak
11249.860	51.4	V	54.0	-2.6	AVG	109	1.4	RB 1 MHz;VB 10 Hz;Peak
11249.720	57.5	V	74.0	-16.5	PK	109	1.4	RB 1 MHz;VB 3 MHz;Peak
13749.540	54.0	V	68.3	-14.3	PK	256	1.5	RB 1 MHz;VB 3 MHz;Peak
12499.900	47.9	V	54.0	-6.1	AVG	223	1.6	RB 1 MHz;VB 10 Hz;Peak
12500.020	52.3	V	74.0	-21.7	PK	223	1.6	RB 1 MHz;VB 3 MHz;Peak

Note 1:	All emissions above are narrow band signals with no duty cycle.
Note 2:	For emissions in restricted bands, the limit of 15.209 was used which requires average and peak measurements.
Note 3:	For emissions outside of the restricted bands the limit is -27dBm/MHz eirp (68.3dBuV/m). The measurement method required is a peak measurement (RB=1MHz, VB≥3MHz, peak detector).
Note 4:	Scans made between 18 - 40 GHz with the measurement antenna moved around the card and its antennas 20-50cm from the device indicated there were no significant emissions in this frequency range other than the test bed emissions.

Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A





Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A

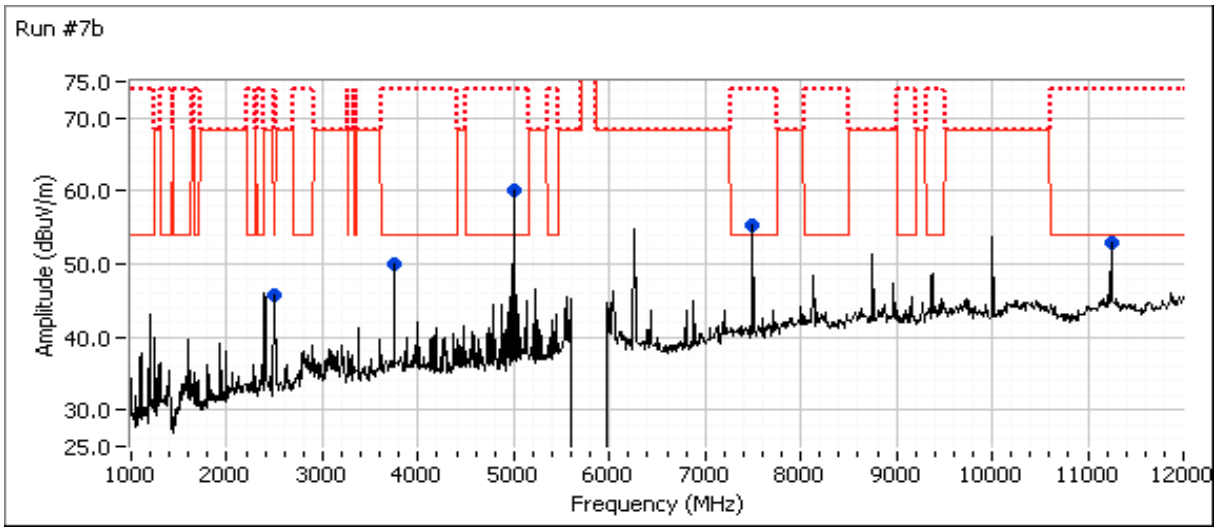
Run #7b: Center Channel

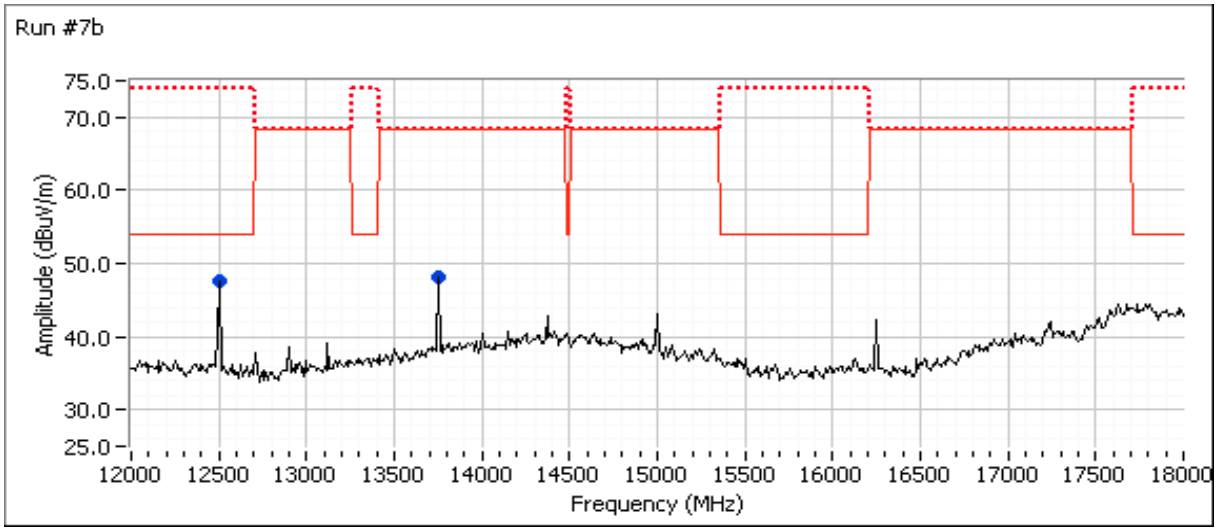
Channel: 157 Mode: 11n20
Tx Chain: 4Tx (txchain 0xf) Data Rate: MCS0

Frequency	Level	Pol	15.209 / 15E		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
5000.000	61.4	V	54.0	7.4	AVG	27	1.7	RB 1 MHz;VB 10 Hz;Peak
4999.960	62.6	V	74.0	-11.4	PK	27	1.7	RB 1 MHz;VB 3 MHz;Peak
3749.980	49.8	V	54.0	-4.2	AVG	243	1.5	RB 1 MHz;VB 10 Hz;Peak
3749.990	53.3	V	74.0	-20.7	PK	243	1.5	RB 1 MHz;VB 3 MHz;Peak
2500.000	45.4	H	54.0	-8.6	AVG	105	1.0	RB 1 MHz;VB 10 Hz;Peak
2499.900	49.2	H	74.0	-24.8	PK	105	1.0	RB 1 MHz;VB 3 MHz;Peak
7499.960	55.1	V	54.0	1.1	AVG	240	1.0	RB 1 MHz;VB 10 Hz;Peak
7499.970	58.2	V	74.0	-15.8	PK	240	1.0	RB 1 MHz;VB 3 MHz;Peak
11249.930	51.6	V	54.0	-2.4	AVG	107	1.3	RB 1 MHz;VB 10 Hz;Peak
11249.770	57.6	V	74.0	-16.4	PK	107	1.3	RB 1 MHz;VB 3 MHz;Peak
12499.900	48.2	V	54.0	-5.8	AVG	255	1.4	RB 1 MHz;VB 10 Hz;Peak
12499.660	52.8	V	74.0	-21.2	PK	255	1.4	RB 1 MHz;VB 3 MHz;Peak
13750.120	54.5	V	68.3	-13.8	PK	111	1.5	RB 1 MHz;VB 3 MHz;Peak

Note 1:	All emissions above are narrow band signals with no duty cycle.
Note 2:	For emissions in restricted bands, the limit of 15.209 was used which requires average and peak measurements.
Note 3:	For emissions outside of the restricted bands the limit is -27dBm/MHz eirp (68.3dBuV/m). The measurement method required is a peak measurement (RB=1MHz, VB≥3MHz, peak detector).
Note 4:	Scans made between 18 - 40 GHz with the measurement antenna moved around the card and its antennas 20-50cm from the device indicated there were no significant emissions in this frequency range other than the test bed emissions.

Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A





Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A

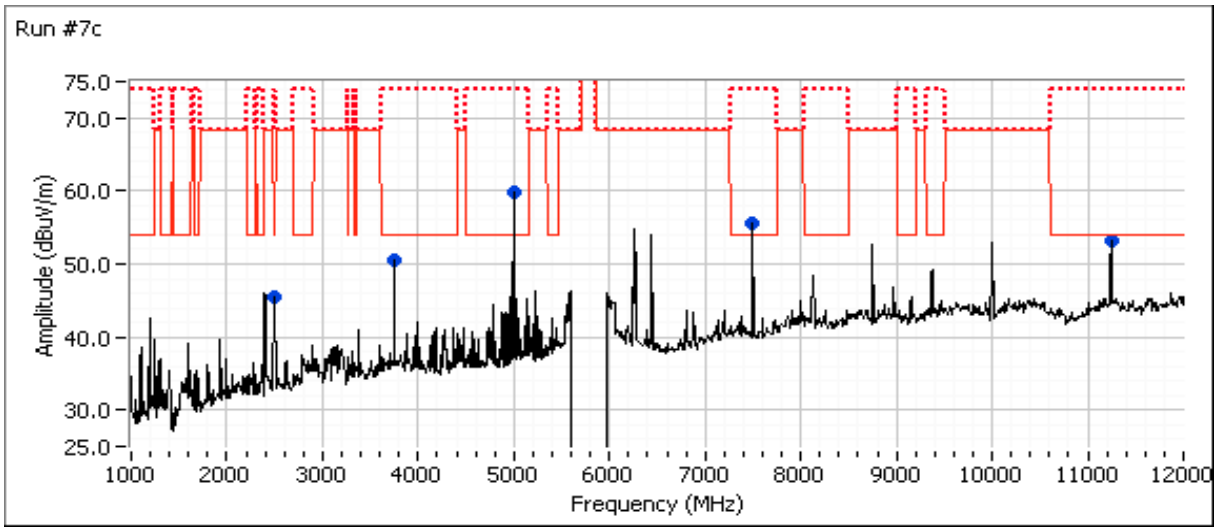
Run #7c: Center Channel

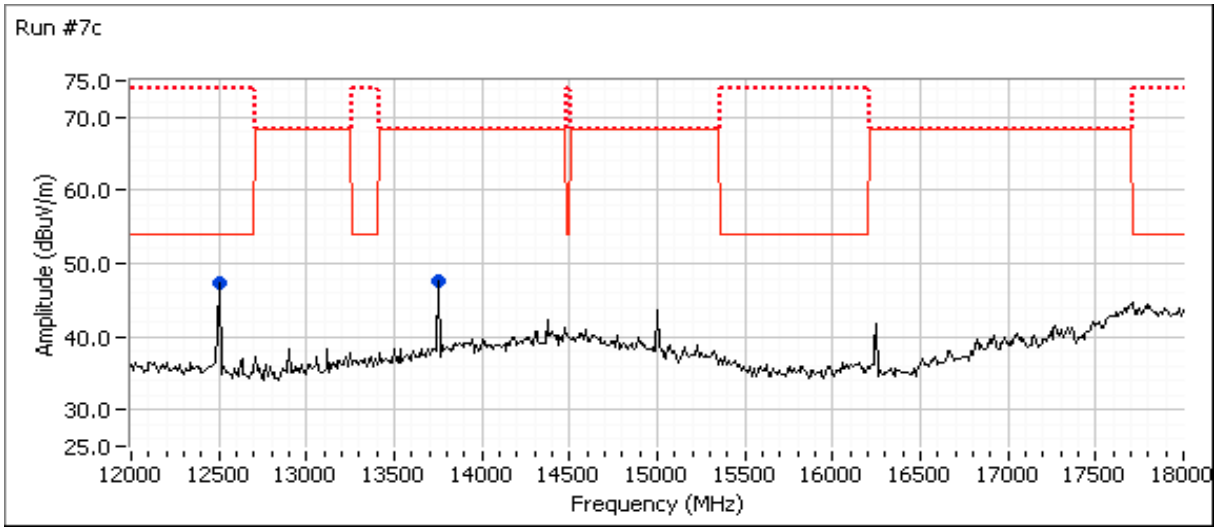
Channel: 151 Mode: 11n40
Tx Chain: 4Tx (txchain 0xf) Data Rate: MCS0

Frequency	Level	Pol	15.209 / 15E		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2499.990	44.1	V	54.0	-9.9	AVG	126	1.7	RB 1 MHz;VB 10 Hz;Peak
2499.980	48.7	V	74.0	-25.3	PK	126	1.7	RB 1 MHz;VB 3 MHz;Peak
3750.000	49.8	V	54.0	-4.2	AVG	242	1.5	RB 1 MHz;VB 10 Hz;Peak
3749.880	53.6	V	74.0	-20.4	PK	242	1.5	RB 1 MHz;VB 3 MHz;Peak
4999.980	60.9	V	54.0	6.9	AVG	23	1.8	RB 1 MHz;VB 10 Hz;Peak
5000.040	62.1	V	74.0	-11.9	PK	23	1.8	RB 1 MHz;VB 3 MHz;Peak
7499.970	55.5	V	54.0	1.5	AVG	240	1.0	RB 1 MHz;VB 10 Hz;Peak
7500.000	58.7	V	74.0	-15.3	PK	240	1.0	RB 1 MHz;VB 3 MHz;Peak
11249.890	51.7	V	54.0	-2.3	AVG	108	1.4	RB 1 MHz;VB 10 Hz;Peak
11249.760	57.6	V	74.0	-16.4	PK	108	1.4	RB 1 MHz;VB 3 MHz;Peak
13750.020	54.8	V	68.3	-13.5	PK	106	1.5	RB 1 MHz;VB 3 MHz;Peak
12499.930	48.0	V	54.0	-6.0	AVG	260	1.4	RB 1 MHz;VB 10 Hz;Peak
12499.880	52.4	V	74.0	-21.6	PK	260	1.4	RB 1 MHz;VB 3 MHz;Peak

Note 1:	All emissions above are narrow band signals with no duty cycle.
Note 2:	For emissions in restricted bands, the limit of 15.209 was used which requires average and peak measurements.
Note 3:	For emissions outside of the restricted bands the limit is -27dBm/MHz eirp (68.3dBuV/m). The measurement method required is a peak measurement (RB=1MHz, VB≥3MHz, peak detector).
Note 4:	Scans made between 18 - 40 GHz with the measurement antenna moved around the card and its antennas 20-50cm from the device indicated there were no significant emissions in this frequency range other than the test bed emissions.

Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A





Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A

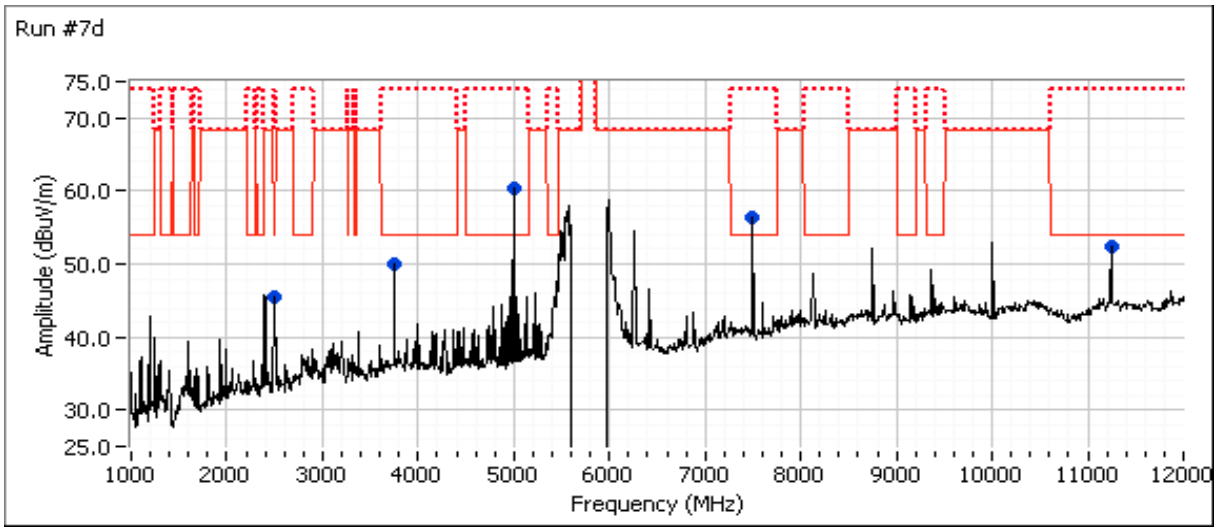
Run #7d: Center Channel

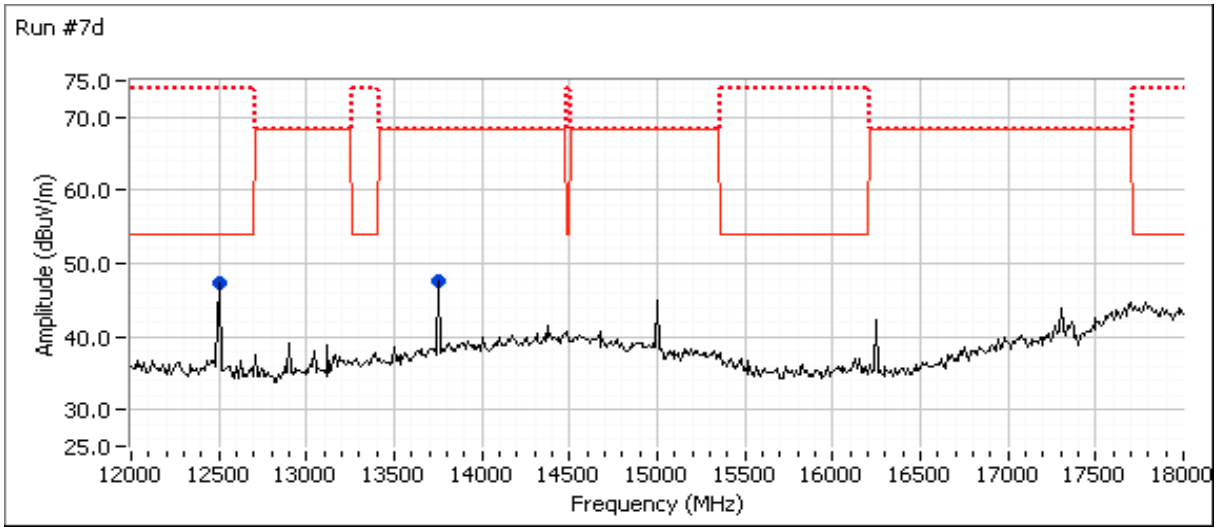
Channel: 155 Mode: ac80
Tx Chain: 4Tx (txchain 0xf) Data Rate: VHT0

Frequency	Level	Pol	15.209 / 15E		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2499.960	44.5	V	54.0	-9.5	AVG	127	1.5	RB 1 MHz;VB 10 Hz;Peak
2499.870	48.7	V	74.0	-25.3	PK	127	1.5	RB 1 MHz;VB 3 MHz;Peak
3750.000	49.8	V	54.0	-4.2	AVG	240	1.2	RB 1 MHz;VB 10 Hz;Peak
3750.000	53.4	V	74.0	-20.6	PK	240	1.2	RB 1 MHz;VB 3 MHz;Peak
5000.020	60.9	V	54.0	6.9	AVG	26	1.8	RB 1 MHz;VB 10 Hz;Peak
4999.950	62.1	V	74.0	-11.9	PK	26	1.8	RB 1 MHz;VB 3 MHz;Peak
7499.950	55.4	V	54.0	1.4	AVG	238	1.0	RB 1 MHz;VB 10 Hz;Peak
7499.820	58.9	V	74.0	-15.1	PK	238	1.0	RB 1 MHz;VB 3 MHz;Peak
11249.890	51.6	V	54.0	-2.4	AVG	109	1.5	RB 1 MHz;VB 10 Hz;Peak
11249.940	57.4	V	74.0	-16.6	PK	109	1.5	RB 1 MHz;VB 3 MHz;Peak
12499.940	47.9	V	54.0	-6.1	AVG	265	1.4	RB 1 MHz;VB 10 Hz;Peak
12499.840	52.4	V	74.0	-21.6	PK	265	1.4	RB 1 MHz;VB 3 MHz;Peak
13750.080	54.3	V	68.3	-14.0	PK	103	1.5	RB 1 MHz;VB 3 MHz;Peak

Note 1:	All emissions above are narrow band signals with no duty cycle.
Note 2:	For emissions in restricted bands, the limit of 15.209 was used which requires average and peak measurements.
Note 3:	For emissions outside of the restricted bands the limit is -27dBm/MHz eirp (68.3dBuV/m). The measurement method required is a peak measurement (RB=1MHz, VB≥3MHz, peak detector).
Note 4:	Scans made between 18 - 40 GHz with the measurement antenna moved around the card and its antennas 20-50cm from the device indicated there were no significant emissions in this frequency range other than the test bed emissions.

Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A





Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A

Run #8: Radiated Spurious Emissions, 1,000 - 40000 MHz. Operating Mode: Worse case from Run #7

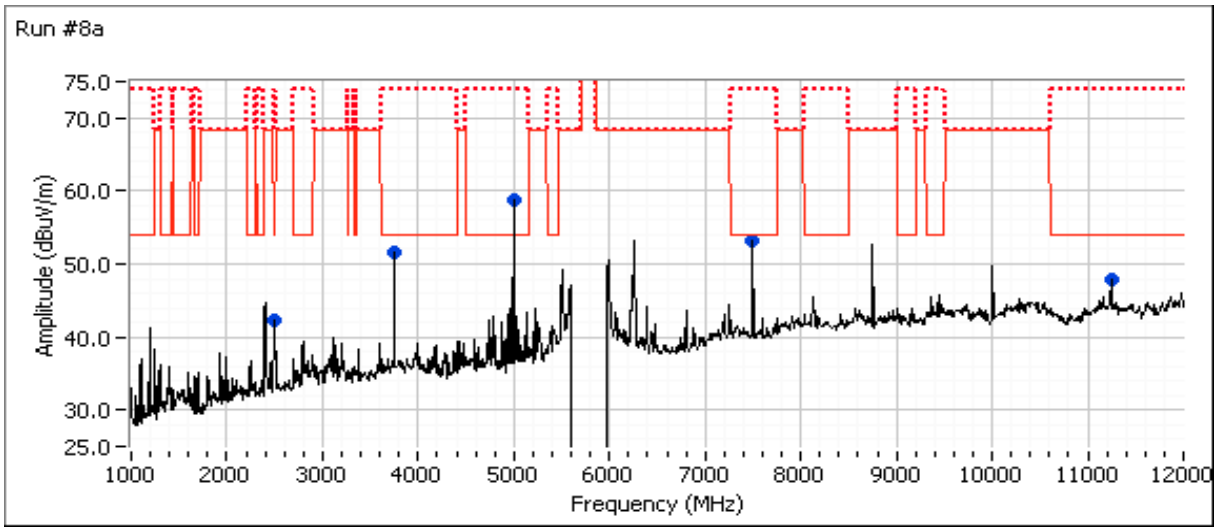
Date of Test: 10/1/2015 Config. Used: 1
Test Engineer: Deniz Demirci Config Change: None
Test Location: FT Ch #5 Host Unit Voltage POE

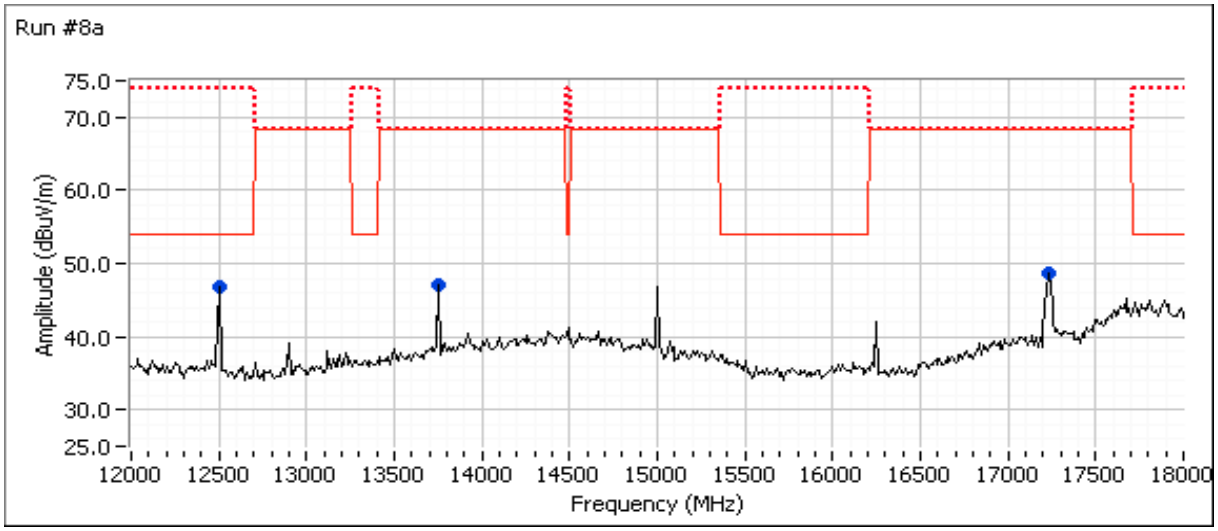
Run #8a: Low Channel

Channel: 149 Mode: a
Tx Chain: 4Tx (txchain 0xf) Data Rate: 6 Mbps

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
2500.000	44.0	H	54.0	-10.0	AVG	100	1.0	RB 1 MHz;VB 10 Hz;Peak
2499.930	48.2	H	74.0	-25.8	PK	100	1.0	RB 1 MHz;VB 3 MHz;Peak
3750.010	50.2	V	54.0	-3.8	AVG	234	1.5	RB 1 MHz;VB 10 Hz;Peak
3749.970	53.8	V	74.0	-20.2	PK	234	1.5	RB 1 MHz;VB 3 MHz;Peak
4999.970	60.6	V	54.0	6.6	AVG	33	1.9	RB 1 MHz;VB 10 Hz;Peak
5000.000	61.9	V	74.0	-12.1	PK	33	1.9	RB 1 MHz;VB 3 MHz;Peak
7499.960	55.2	V	54.0	1.2	AVG	250	1.3	RB 1 MHz;VB 10 Hz;Peak
7499.900	58.4	V	74.0	-15.6	PK	250	1.3	RB 1 MHz;VB 3 MHz;Peak
11249.930	51.1	H	54.0	-2.9	AVG	234	1.0	RB 1 MHz;VB 10 Hz;Peak
11250.280	56.9	H	74.0	-17.1	PK	234	1.0	RB 1 MHz;VB 3 MHz;Peak
12499.900	47.9	V	54.0	-6.1	AVG	265	1.4	RB 1 MHz;VB 10 Hz;Peak
12500.090	52.3	V	74.0	-21.7	PK	265	1.4	RB 1 MHz;VB 3 MHz;Peak
13750.150	54.2	V	68.3	-14.1	PK	105	1.5	RB 1 MHz;VB 3 MHz;Peak
Note 1:	All emissions above are narrow band signals with no duty cycle.							
17217.670	58.8	V	68.3	-9.5	PK	311	1.7	RB 1 MHz;VB 3 MHz;Peak
Note 2:	For emissions in restricted bands, the limit of 15.209 was used which requires average and peak measurements.							
Note 3:	For emissions outside of the restricted bands the limit is -27dBm/MHz eirp (68.3dBuV/m). The measurement method required is a peak measurement (RB=1MHz, VB≥3MHz, peak detector).							
Note 4:	Scans made between 18 - 40 GHz with the measurement antenna moved around the card and its antennas 20-50cm from the device indicated there were no significant emissions in this frequency range other than the test bed emissions.							

Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A





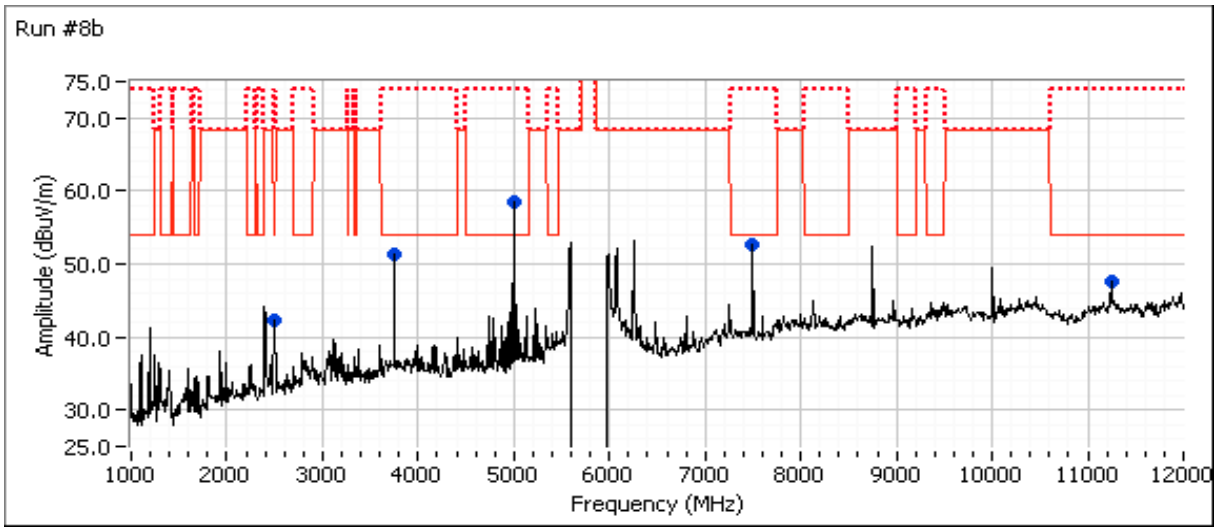
Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A

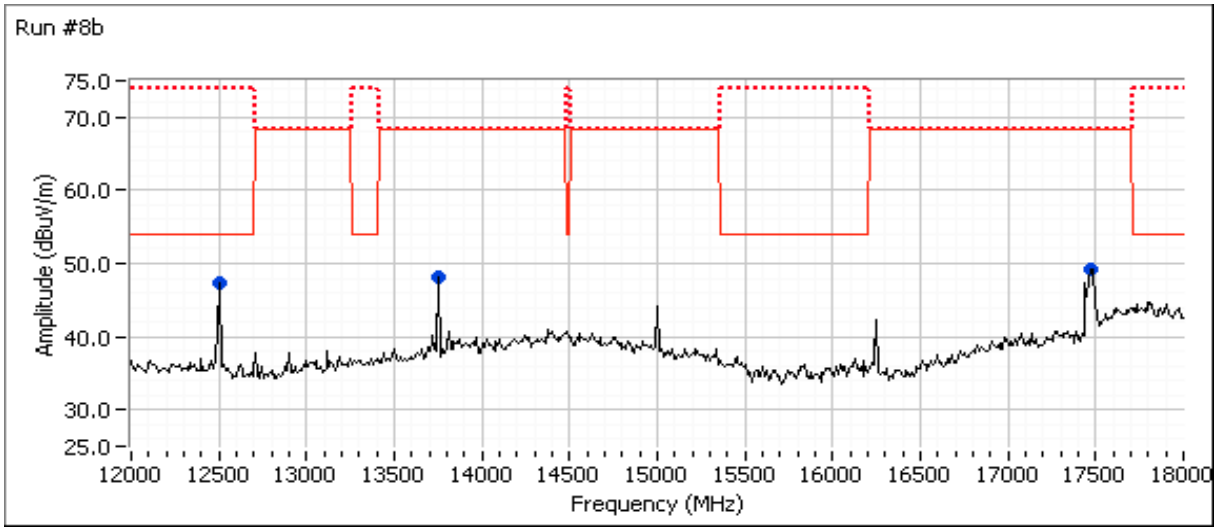
Run #8b: High Channel

Channel: 165 Mode: a
Tx Chain: 4Tx (txchain 0xf) Data Rate: 6 Mbps

Frequency	Level	Pol	15.209 / 15.247		Detector	Azimuth	Height	Comments
MHz	dBµV/m	v/h	Limit	Margin	Pk/QP/Avg	degrees	meters	
4999.980	60.9	V	54.0	6.9	AVG	35	1.6	RB 1 MHz;VB 10 Hz;Peak
5000.040	61.8	V	74.0	-12.2	PK	35	1.6	RB 1 MHz;VB 3 MHz;Peak
3749.980	50.4	V	54.0	-3.6	AVG	233	1.5	RB 1 MHz;VB 10 Hz;Peak
3750.010	53.9	V	74.0	-20.1	PK	233	1.5	RB 1 MHz;VB 3 MHz;Peak
2500.000	44.3	H	54.0	-9.7	AVG	126	1.2	RB 1 MHz;VB 10 Hz;Peak
2499.680	48.7	H	74.0	-25.3	PK	126	1.2	RB 1 MHz;VB 3 MHz;Peak
7499.910	55.8	V	54.0	1.8	AVG	249	1.4	RB 1 MHz;VB 10 Hz;Peak
7500.210	58.9	V	74.0	-15.1	PK	249	1.4	RB 1 MHz;VB 3 MHz;Peak
11249.910	51.3	V	54.0	-2.7	AVG	103	1.0	RB 1 MHz;VB 10 Hz;Peak
11250.220	57.1	V	74.0	-16.9	PK	103	1.0	RB 1 MHz;VB 3 MHz;Peak
13749.860	54.2	V	68.3	-14.1	PK	111	1.6	RB 1 MHz;VB 3 MHz;Peak
12499.840	48.0	V	54.0	-6.0	AVG	225	1.3	RB 1 MHz;VB 10 Hz;Peak
12500.090	52.4	V	74.0	-21.6	PK	225	1.3	RB 1 MHz;VB 3 MHz;Peak
Note:	All emissions above are narrow band signals with no duty cycle.							
17478.400	59.8	V	68.3	-8.5	PK	123	1.7	RB 1 MHz;VB 3 MHz;Peak
Note 2:	For emissions in restricted bands, the limit of 15.209 was used which requires average and peak measurements.							
Note 3:	For emissions outside of the restricted bands the limit is -27dBm/MHz eirp (68.3dBuV/m). The measurement method required is a peak measurement (RB=1MHz, VB≥3MHz, peak detector).							
Note 4:	Scans made between 18 - 40 GHz with the measurement antenna moved around the card and its antennas 20-50cm from the device indicated there were no significant emissions in this frequency range other than the test bed emissions.							

Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A





Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A

RSS-247 (LELAN) and FCC 15.407(UNII)
Antenna Port Measurements
Power, PSD, Bandwidth and Spurious Emissions

Test Specific Details

Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the specification listed above.

Summary of Results

Run #	Test Performed	Limit	Pass / Fail	Result / Margin
FCC Only - 4Tx				
1	Power, 5150 - 5250MHz	15.407(a) (1), (2)	Pass	a: 23.7 dBm (0.234 W) HT20: 23.9 dBm (0.243 W) HT40: 23.0 dBm (0.199 W) AC80: 16.9 dBm (0.050 W)
1	PSD, 5150 - 5250MHz	15.407(a) (1), (2)	Pass	a: 11.4 dBm/MHz HT20: 11.3 dBm/MHz HT40: 7.2 dBm/MHz AC80: -1.5 dBm/MHz
IC Only - 4Tx				
1	Power, 5150 - 5250MHz	6.2.1 (1)	Pass	a: 16.4 dBm eirp HT20: 16.6 dBm eirp HT40: 19.7 dBm eirp AC80: 20.8 dBm eirp
1	PSD, 5150 - 5250MHz	6.2.1 (1)	Pass	a: 0.0 dBm/MHz HT20: 0.0 dBm/MHz HT40: 0.0 dBm/MHz AC80: 0.7 dBm/MHz
1	99% Bandwidth	RSS 247 (Information only)	N/A	a: 16.9 MHz HT20: 18.1 MHz HT40: 36.4 MHz AC80: 75.6 MHz
IC Only - 4TxBF: See results below (power reduction in HT40 and AC80 modes.)				

General Test Configuration

When measuring the conducted emissions from the EUT's antenna port, the antenna port of the EUT was connected to the spectrum analyzer or power meter via a suitable attenuator to prevent overloading the measurement system. All measurements are corrected to allow for the external attenuators and cables used.

Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A

Ambient Conditions:

Temperature: 20-21 °C
Rel. Humidity: 30-35 %

Modifications Made During Testing

No modifications were made to the EUT during testing

Deviations From The Standard

No deviations were made from the requirements of the standard.

Procedure Comments:

Measurements performed in accordance with FCC KDB 789033

Mode	Data Rate	Duty Cycle (x)	Constant DC?	T (ms)	Pwr Cor Factor*	Lin Volt Cor Factor**	Min VBW for FS (Hz)
11g/a	6Mb/s	98.3%	Yes	2.086	0	0	10
HT20	MCS0	98.6%	Yes	1.906	0.00	0.00	10
HT40	MCS0	98.0%	Yes	0.942	0.00	0.00	10
ac80	VHT0	96.0%	Yes	0.46	0.18	0.35	2174

Sample Notes

Sample S/N: BET3715XRU20121
Driver: 10.10 RC69.10

Port Setting: J400 Port 1 J500 Port 3
J401 Port 2 J501 Port 4

Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A

Run #1: Bandwidth, Output Power and Power Spectral Density - MIMO Systems

Date of Test: 10/8/2015, 10/9/2015 Config. Used: 1

Test Engineer: Deniz Demirci Config Change: None

Test Location: FT Lab #4b EUT Voltage: POE

Note 1:	For the transmit duty cycle ≥ 98 percent, output power measured using a spectrum analyzer (see plots below). RBW=1MHz, VB=3 MHz, # of points in sweep ≥ 2*span/RBW, RMS detector, trace average 100 traces, power averaging on and power integration over 99% BW MHz (method SA-1 of KDB 789033).
Note 2:	For the transmit duty cycle ≤ 98 percent, output power measured using a spectrum analyzer (see plots below). RBW=1MHz, VB=3 MHz, # of points in sweep ≥ 2*span/RBW, RMS detector, trace average 100 traces, power averaging on and power integration over 99% bandwidth. The measurements adjusted by adding YY. This is based on 10log(1/x), where x is the duty cycle. (method SA-2 of KDB 789033)
Note 3:	PSD measured using the same analyzer settings used for output power.
Note 3:	For RSS-247 the limit for the 5150 - 5250 MHz band accounts for the antenna gain as the maximum eirp allowed is 23dBm/MHz.
Note 5:	For MIMO systems the total output power and total PSD are calculated form the sum of the powers of the individual chains (in linear terms). The antenna gain used to determine the EIRP and limits for PSD/Output power depends on the operating mode of the MIMO device. If the signals on the non-coherent between the transmit chains then the gain used to determine the limits is the highest gain of the individual chains and the EIRP is the sum of the products of gain and power on each chain. If the signals are coherent then the effective antenna gain is the sum (in linear terms) of the gains for each chain and the EIRP is the product of the effective gain and total power.

Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A

Antenna Gain Information - 4Tx

Freq	Antenna Gain (dBi) / Chain				BF	MultiChain Legacy	CDD	Sectorized / Xpol	Dir G (PWR)	Dir G (PSD)
	1	2	3	4						
5150-5250	1.9	6.7	3.6	1.5	No	Yes	Yes	No	3.9	9.9
5250-5350	2.8	8.8	4.7	5.2	No	Yes	Yes	No	6.0	12.0
5470-5725	3.4	6.9	3.3	5.8	No	Yes	Yes	No	5.1	11.1
5725-5850	3.3	4.9	3.8	3.1	No	Yes	Yes	No	3.8	9.8

Antenna Gain Information - 4TxBF

Freq	Antenna Gain (dBi) / Chain				BF	MultiChain Legacy	CDD	Sectorized / Xpol	Dir G (PWR)	Dir G (PSD)
	1	2	3	4						
5150-5250	1.9	6.7	3.6	1.5	Yes	Yes	Yes	No	9.7	9.7
5250-5350	2.8	8.8	4.7	5.2	Yes	Yes	Yes	No	11.7	11.7
5470-5725	3.4	6.9	3.3	5.8	Yes	Yes	Yes	No	11.0	11.0
5725-5850	3.3	4.9	3.8	3.1	Yes	Yes	Yes	No	9.8	9.8

For devices that support CDD modes

Min # of spatial streams: 1
Max # of spatial streams: 4

Notes:	BF = beamforming mode supported, Multichain Legacy = 802.11 legacy data rates supported for multichain transmissions, CDD = Cyclic Delay Diversity (or Cyclic Shift Diversity) modes supported, Sectorized / Xpol = antennas are sectorized or cross polarized.
Notes:	Dir G (PWR) = total gain (Gant + Array Gain) for power calculations; GA (PSD) = total gain for PSD calculations based on FCC KDB 662911. Depending on the modes supported, the Array Gain value for power could be different from the PSD value.
Notes:	Array gain for power/psd calculated per KDB 662911 D01.
Notes:	For systems with Beamforming and CDD, choose one the following options: Option 1: Delays are optimized for beamforming, rather than being selected from cyclic delay table of 802.11; Array gains calculated based on beamforming criteria. Option 2: Antennas are paired for beamforming, and the pairs are configured to use the cyclic delay diversity of 802.11; the array gain associated with beamforming with 2 antennas (3dB), and the array gain associated with CDD with two antennas (3dB for PSD and 0 dB for power)

Client:	Xirrus	Job Number:	JD99498
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		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A

MIMO Device - 5150-5250 MHz Band - FCC

Mode: 11a - 4Tx Max EIRP (mW): 573.7

Frequency (MHz)	Chain	Software Setting	26dB BW (MHz)	Duty Cycle %	Power[1] dBm	Total Power mW	Total Power dBm	FCC Limit dBm	Max Power (W)	Result
5180	1	15		98.3	16.8	177.7	22.5	30.0	0.234	Pass
	3				15.8					
	4				17.0					
	2				16.2					
5200	1	16		98.3	17.8	233.7	23.7	30.0		Pass
	3				17.0					
	4				17.9					
	2				17.9					
5240	1	16		98.3	17.6	226.7	23.6	30.0		Pass
	3				18.1					
	4				17.7					
	2				16.6					

MIMO Device - 5150-5250 MHz Band - Industry Canada

Mode: 11a - 4Tx Max EIRP (mW): 43.7

Frequency (MHz)	Chain	Software Setting	99% BW (MHz)	Duty Cycle %	Power[1] dBm	Total Power dBm	Total Power dBm (eirp)	IC limit dBm (eirp)	Max Power (W)	Result
5180	1	5	16.9	98.3	7.1	12.5	16.40	22.3	0.018	Pass
	3				5.6					
	4				6.9					
	2				6.2					
5200	1	4	16.9	98.3	6.2	11.9	15.80	22.3		Pass
	3				5.8					
	4				6.1					
	2				5.3					
5240	1	4	17.0	98.3	6.0	11.7	15.60	22.3		Pass
	3				5.8					
	4				5.9					
	2				4.9					

Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A

5150-5250 PSD - FCC

Mode: 11a - 4Tx

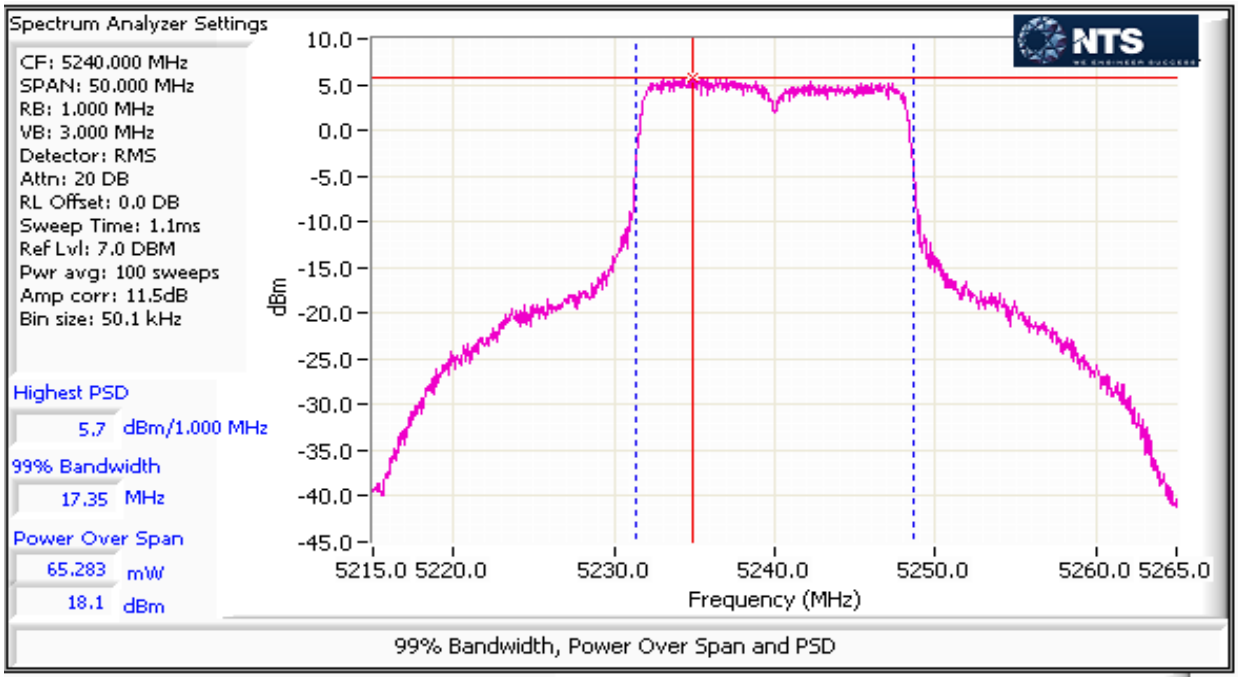
Frequency (MHz)	Chain	Software Setting	99% BW (MHz)	Duty Cycle %	PSD dBm/MHz	Total PSD[1] mW/MHz	Total PSD[1] dBm/MHz	FCC Limit dBm/MHz		Result
5180	1	15		98.3	4.3	9.9	10.0	13.1	-	Pass
	3				3.4					
	4				4.3					
	2				3.7					
5200	1	16		98.3	5.6	13.2	11.2	13.1	-	Pass
	3				5.2					
	4				5.5					
	2				4.4					
5240	1	16		98.3	5.2	13.7	11.4	13.1	-	Pass
	3				5.7					
	4				5.4					
	2				5.0					

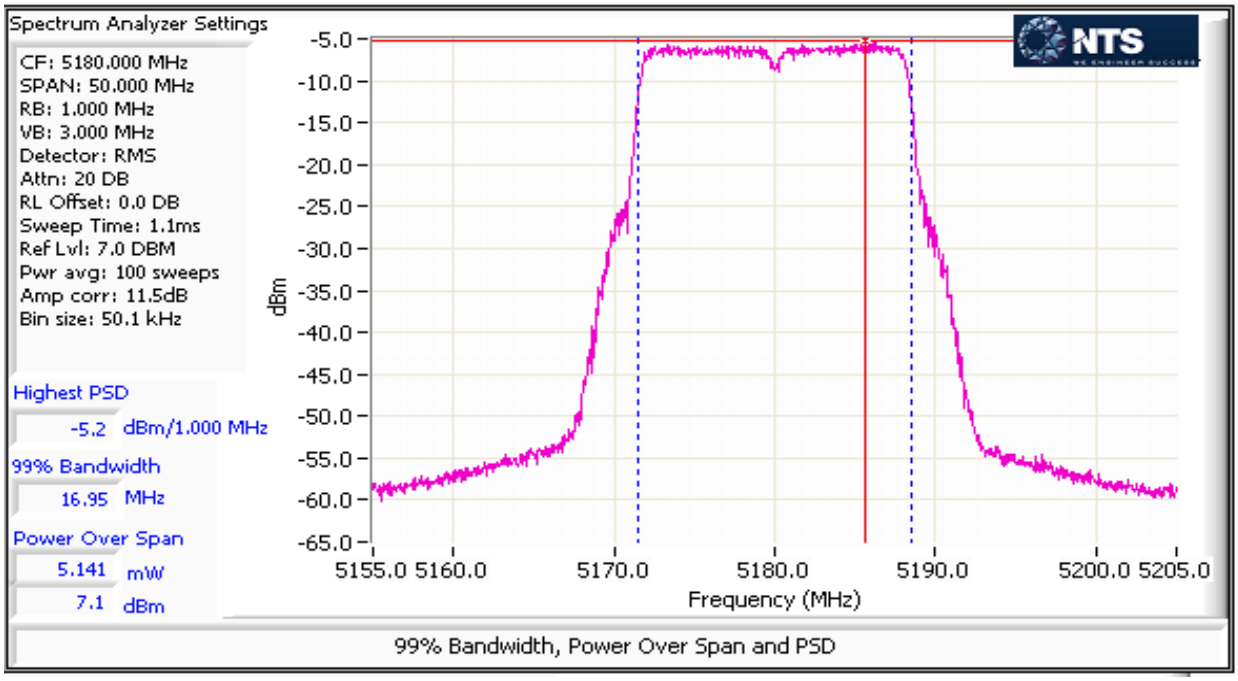
5150-5250 PSD - IC

Mode: 11a - 4Tx

Frequency (MHz)	Chain	Software Setting	99% BW (MHz)	Duty Cycle %	PSD dBm/MHz	Total PSD[1] mW/MHz	Total PSD[1] dBm/MHz	dBm/MHz	IC Limit	Result
5180	1	5		98.3	-5.2	1.0	0.0	-	0.1	Pass
	3				-6.4					
	4				-5.6					
	2				-6.2					
5200	1	4		98.3	-6.1	0.9	-0.5	-	0.1	Pass
	3				-6.6					
	4				-6.3					
	2				-7.1					
5240	1	4		98.3	-5.9	0.9	-0.5	-	0.1	Pass
	3				-6.5					
	4				-6.0					
	2				-7.2					

Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A





Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A

MIMO Device - 5150-5250 MHz Band - FCC

Mode: HT20 - 4Tx Max EIRP (mW): 597.5

Frequency (MHz)	Chain	Software Setting	26dB BW (MHz)	Duty Cycle %	Power[1] dBm	Total Power mW	Total Power dBm	FCC Limit dBm	Max Power (W)	Result
5180	1	14		98.6	15.6	149.0	21.7	30.0	0.243	Pass
	3				16.0					
	4				16.0					
	2				15.2					
5200	1	16		98.6	18.3	243.4	23.9	30.0		Pass
	3				17.8					
	4				18.0					
	2				17.2					
5240	1	16		98.6	17.9	230.8	23.6	30.0		Pass
	3				18.1					
	4				17.7					
	2				16.6					

MIMO Device - 5150-5250 MHz Band - Industry Canada

Mode: HT20 - 4Tx Max EIRP (mW): 45.7

Frequency (MHz)	Chain	Software Setting	99% BW (MHz)	Duty Cycle %	Power[1] dBm	Total Power dBm	Total Power dBm (eirp)	IC limit dBm (eirp)	Max Power (W)	Result
5180	1	5	18.1	98.6	6.8	12.7	16.6	22.6	0.019	Pass
	3				6.9					
	4				6.9					
	2				6.2					
5200	1	5	18.1	98.6	7.5	12.7	16.6	22.6		Pass
	3				6.0					
	4				6.9					
	2				6.2					
5240	1	5	18.1	98.6	6.3	12.3	16.2	22.6		Pass
	3				6.2					
	4				6.7					
	2				6.0					

Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A

5150-5250 PSD - FCC

Mode: HT20 - 4Tx

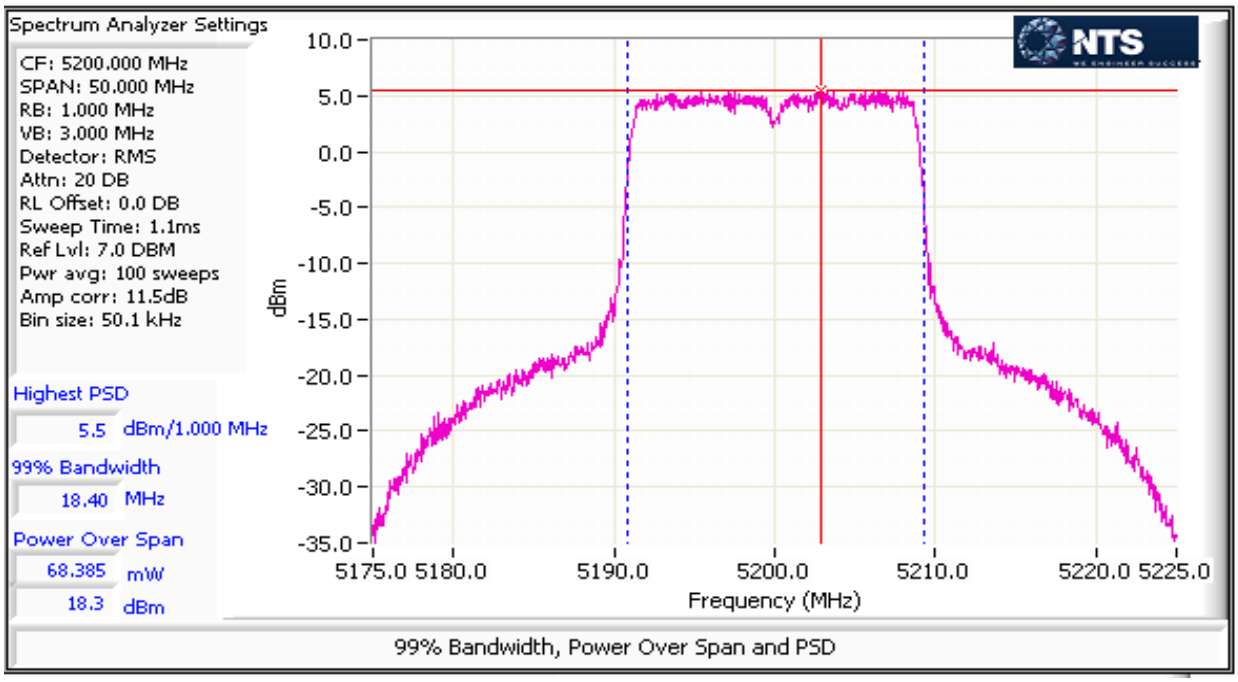
Frequency (MHz)	Chain	Software Setting	99% BW (MHz)	Duty Cycle %	PSD dBm/MHz	Total PSD[1] mW/MHz	Total PSD[1] dBm/MHz	FCC Limit dBm/MHz		Result
5180	1	14		98.6	2.9	8.2	9.1	13.1	-	Pass
	3				3.5					
	4				3.3					
	2				2.8					
5200	1	16		98.6	5.5	13.3	11.2	13.1	-	Pass
	3				5.2					
	4				5.3					
	2				4.9					
5240	1	16		98.6	5.1	13.6	11.3	13.1	-	Pass
	3				5.9					
	4				5.8					
	2				4.2					

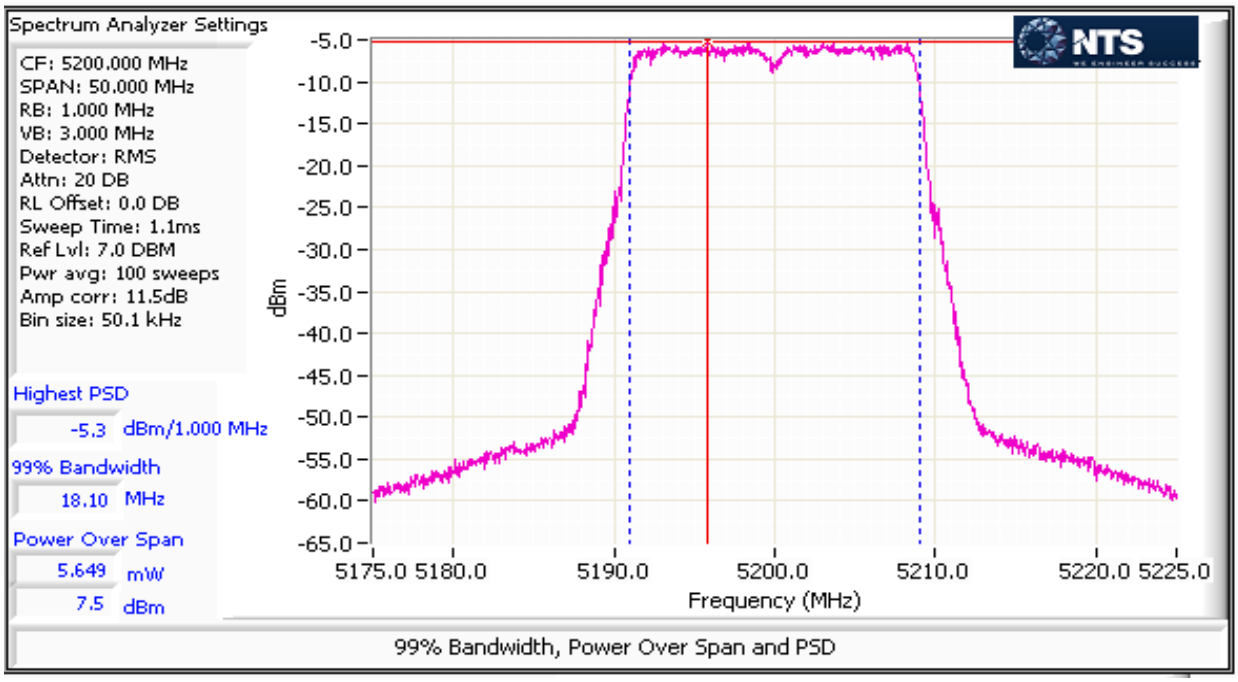
5150-5250 PSD - IC

Mode: HT20 - 4Tx

Frequency (MHz)	Chain	Software Setting	99% BW (MHz)	Duty Cycle %	PSD dBm/MHz	Total PSD[1] mW/MHz	Total PSD[1] dBm/MHz	dBm/MHz	IC Limit	Result
5180	1	5		98.6	-5.8	1.0	0.0	-	0.1	Pass
	3				-5.7					
	4				-5.8					
	2				-6.2					
5200	1	5		98.6	-5.3	1.0	0.0	-	0.1	Pass
	3				-6.0					
	4				-5.8					
	2				-6.5					
5240	1	5		98.6	-6.2	0.9	-0.5	-	0.1	Pass
	3				-6.4					
	4				-6.0					
	2				-6.6					

Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A





Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A

MIMO Device - 5150-5250 MHz Band - FCC

Mode: HT40 - 4Tx Max EIRP (mW): 487.8

Frequency (MHz)	Chain	Software Setting	26dB BW (MHz)	Duty Cycle %	Power[1] dBm	Total Power mW	Total Power dBm	FCC Limit dBm	Max Power (W)	Result
5190	1	10		98	12.1	60.0	17.8	30.0	0.199	Pass
	3				11.6					
	4				11.9					
	2				11.4					
5230	1	15		98	17.2	198.7	23.0	30.0		Pass
	3				17.2					
	4				17.0					
	2				16.4					

MIMO Device - 5150-5250 MHz Band - Industry Canada

Mode: HT40 - 4Tx Max EIRP (mW): 93.3

Frequency (MHz)	Chain	Software Setting	99% BW (MHz)	Duty Cycle %	Power[1] dBm	Total Power dBm	Total Power dBm (eirp)	IC limit dBm (eirp)	Max Power (W)	Result
5190	1	8	36.4	98	10.1	15.7	19.6	23.0	0.038	Pass
	3				9.3					
	4				9.9					
	2				9.5					
5230	1	8	36.4	98	10.1	15.8	19.7	23.0		Pass
	3				9.6					
	4				9.9					
	2				9.7					

Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A

5150-5250 PSD - FCC

Mode: HT40 - 4Tx

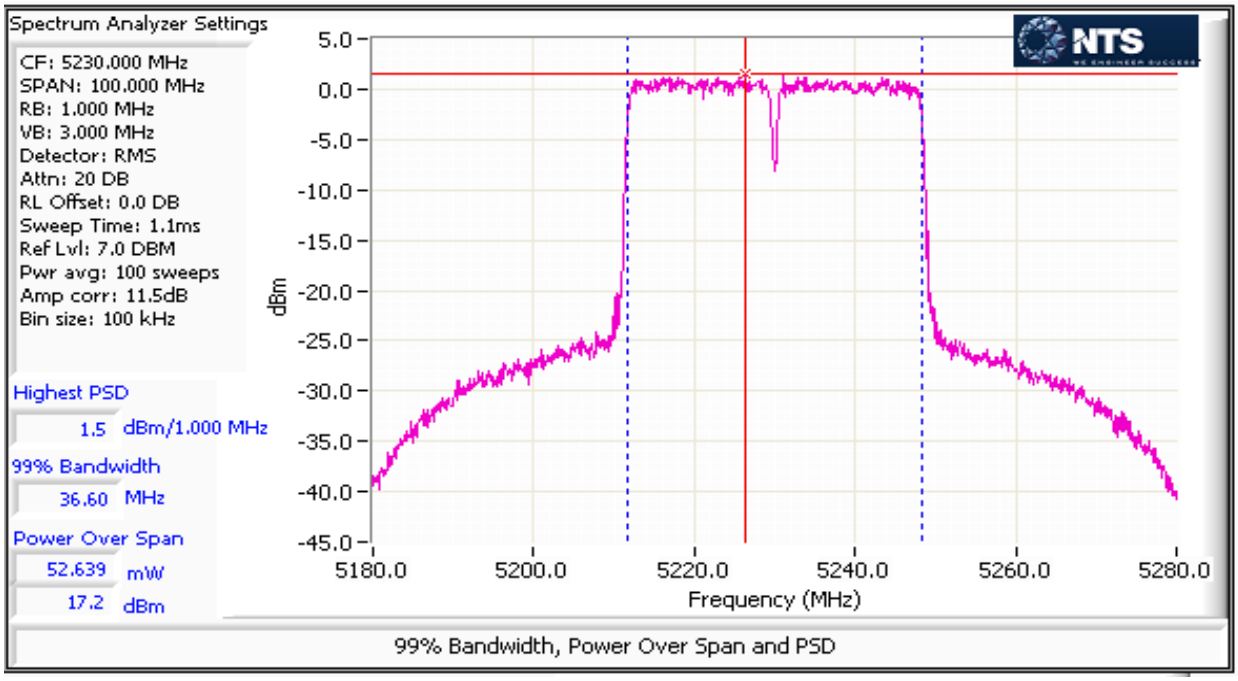
Frequency (MHz)	Chain	Software Setting	99% BW (MHz)	Duty Cycle %	PSD dBm/MHz	Total PSD[1] mW/MHz	Total PSD[1] dBm/MHz	FCC Limit dBm/MHz		Result
5190	1	10		98	-3.7	1.6	2.0	13.1	-	Pass
	3				-3.9					
	4				-3.9					
	2				-4.2					
5230	1	15		98	1.5	5.3	7.2	13.1	-	Pass
	3				1.5					
	4				1.2					
	2				0.6					

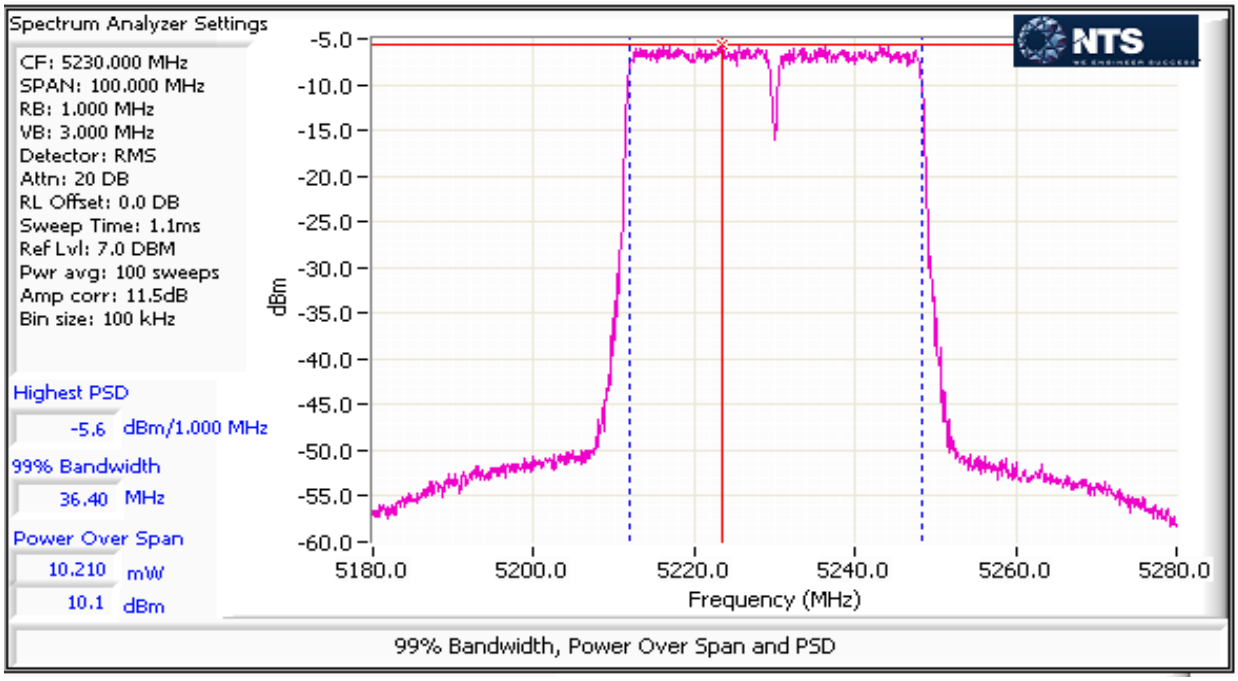
5150-5250 PSD - IC

Mode: HT40 - 4Tx

Frequency (MHz)	Chain	Software Setting	99% BW (MHz)	Duty Cycle %	PSD dBm/MHz	Total PSD[1] mW/MHz	Total PSD[1] dBm/MHz	dBm/MHz	IC Limit dBm/MHz	Result
5190	1	8		98	-5.6	1.0	0.0	-	0.1	Pass
	3				-6.4					
	4				-5.9					
	2				-6.2					
5230	1	8		98	-5.6	1.0	0.0	-	0.1	Pass
	3				-6.2					
	4				-5.9					
	2				-6.0					

Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A





Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A

MIMO Device - 5150-5250 MHz Band - FCC

Mode: AC80 - 4Tx Max EIRP (mW): 121.5

Frequency (MHz)	Chain	Software Setting	26dB BW (MHz)	Duty Cycle %	Power[1] dBm	Total Power mW	Total Power dBm	FCC Limit dBm	Max Power (W)	Result
5210	1	9		96	11.3	49.5	16.9	30.0	0.050	Pass
	3				10.3					
	4				10.9					
	2				10.4					

MIMO Device - 5150-5250 MHz Band - Industry Canada

Mode: AC80 - 4Tx Max EIRP (mW): 120.2

Frequency (MHz)	Chain	Software Setting	99% BW (MHz)	Duty Cycle %	Power[1] dBm	Total Power dBm	Total Power dBm (eirp)	IC limit dBm (eirp)	Max Power (W)	Result
5210	1	9	75.15	96	11.3	16.9	20.8	23.0	0.049	Pass
	3				10.3					
	4				10.9					
	2				10.4					

Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A

5150-5250 PSD - FCC

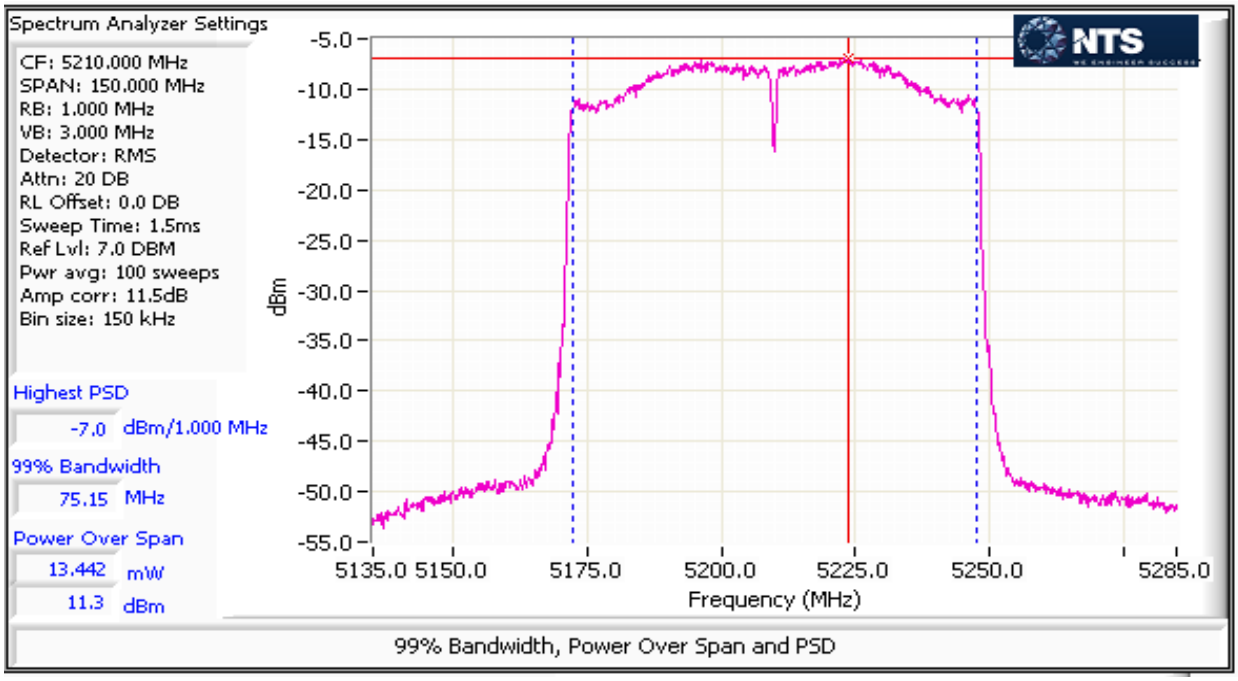
Mode: AC80 - 4Tx

Frequency (MHz)	Chain	Software Setting	99% BW (MHz)	Duty Cycle %	PSD dBm/MHz	Total PSD[1] mW/MHz	Total PSD[1] dBm/MHz	FCC Limit dBm/MHz		Result
5210	1	9		96	-7.0	0.7	-1.5	13.1	-	Pass
	3				-7.9					
	4				-7.2					
	2				-7.9					

5150-5250 PSD - IC

Mode: AC80 - 4Tx

Frequency (MHz)	Chain	Software Setting	99% BW (MHz)	Duty Cycle %	PSD dBm/MHz	Total PSD[1] mW/MHz	Total PSD[1] dBm/MHz		IC Limit dBm/MHz	Result
5210	1	9		96	-7.0	0.7	-1.5	-	0.1	Pass
	3				-7.9					
	4				-7.2					
	2				-7.9					



Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A

MIMO Device - 5150-5250 MHz Band - FCC

Mode: 11a - 4TxBF Max EIRP (mW): 2181

Frequency (MHz)	Chain	Software Setting	26dB BW (MHz)	Duty Cycle %	Power[1] dBm	Total Power mW	Total Power dBm	FCC Limit dBm	Max Power (W)	Result
5180	1	15		98.3	16.8	177.7	22.5	26.3	0.234	Pass
	3				15.8					
	4				17.0					
	2				16.2					
5200	1	16		98.3	17.8	233.7	23.7	26.3		Pass
	3				17.0					
	4				17.9					
	2				17.9					
5240	1	16		98.3	17.6	226.7	23.6	26.3		Pass
	3				18.1					
	4				17.7					
	2				16.6					

MIMO Device - 5150-5250 MHz Band - Industry Canada

Mode: 11a - 4TxBF Max EIRP (mW): 166.0

Frequency (MHz)	Chain	Software Setting	99% BW (MHz)	Duty Cycle %	Power[1] dBm	Total Power dBm	Total Power dBm (eirp)	IC limit dBm (eirp)	Max Power (W)	Result
5180	1	5	16.9	98.3	7.1	12.5	22.2	22.3	0.018	Pass
	3				5.6					
	4				6.9					
	2				6.2					
5200	1	4	16.9	98.3	6.2	11.9	21.6	22.3		Pass
	3				5.8					
	4				6.1					
	2				5.3					
5240	1	4	17	98.3	6.0	11.7	21.4	22.3		Pass
	3				5.8					
	4				5.9					
	2				4.9					

Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A

5150-5250 PSD - FCC

Mode: 11a - 4TxBF

Frequency (MHz)	Chain	Software Setting	99% BW (MHz)	Duty Cycle %	PSD dBm/MHz	Total PSD[1] mW/MHz	Total PSD[1] dBm/MHz	FCC Limit dBm/MHz		Result
5180	1	15		98.3	4.3	9.9	10.0	13.3	-	Pass
	3				3.4					
	4				4.3					
	2				3.7					
5200	1	16		98.3	5.6	13.2	11.2	13.3	-	Pass
	3				5.2					
	4				5.5					
	2				4.4					
5240	1	16		98.3	5.2	13.7	11.4	13.3	-	Pass
	3				5.7					
	4				5.4					
	2				5.0					

5150-5250 PSD - IC

Mode: 11a - 4TxBF

Frequency (MHz)	Chain	Software Setting	99% BW (MHz)	Duty Cycle %	PSD dBm/MHz	Total PSD[1] mW/MHz	Total PSD[1] dBm/MHz	dBm/MHz	IC Limit	Result
5180	1	5		98.3	-5.2	1.0	0.0	-	0.3	Pass
	3				-6.4					
	4				-5.6					
	2				-6.2					
5200	1	4		98.3	-6.1	0.9	-0.5	-	0.3	Pass
	3				-6.6					
	4				-6.3					
	2				-7.1					
5240	1	4		98.3	-5.9	0.9	-0.5	-	0.3	Pass
	3				-6.5					
	4				-6.0					
	2				-7.2					

Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A

MIMO Device - 5150-5250 MHz Band - FCC

Mode: HT20 - 4TxBF Max EIRP (mW): 2271.5

Frequency (MHz)	Chain	Software Setting	26dB BW (MHz)	Duty Cycle %	Power[1] dBm	Total Power mW	Total Power dBm	FCC Limit dBm	Max Power (W)	Result
5180	1	14		98.6	15.6	149.0	21.7	26.3	0.243	Pass
	3				16.0					
	4				16.0					
	2				15.2					
5200	1	16		98.6	18.3	243.4	23.9	26.3		Pass
	3				17.8					
	4				18.0					
	2				17.2					
5240	1	16		98.6	17.9	230.8	23.6	26.3		Pass
	3				18.1					
	4				17.7					
	2				16.6					

MIMO Device - 5150-5250 MHz Band - Industry Canada

Mode: HT20 - 4TxBF Max EIRP (mW): 173.8

Frequency (MHz)	Chain	Software Setting	99% BW (MHz)	Duty Cycle %	Power[1] dBm	Total Power dBm	Total Power dBm (eirp)	IC limit dBm (eirp)	Max Power (W)	Result
5180	1	5	18.1	98.6	6.8	12.7	22.4	22.6	0.019	Pass
	3				6.9					
	4				6.9					
	2				6.2					
5200	1	5	18.1	98.6	7.5	12.7	22.4	22.6		Pass
	3				6.0					
	4				6.9					
	2				6.2					
5240	1	5	18.1	98.6	6.3	12.3	22.0	22.6		Pass
	3				6.2					
	4				6.7					
	2				6.0					

Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A

5150-5250 PSD - FCC

Mode: HT20 - 4TxBF

Frequency (MHz)	Chain	Software Setting	99% BW (MHz)	Duty Cycle %	PSD dBm/MHz	Total PSD[1] mW/MHz	Total PSD[1] dBm/MHz	FCC Limit dBm/MHz		Result
5180	1	14		98.6	2.9	8.2	9.1	13.3	-	Pass
	3				3.5					
	4				3.3					
	2				2.8					
5200	1	16		98.6	5.5	13.3	11.2	13.3	-	Pass
	3				5.2					
	4				5.3					
	2				4.9					
5240	1	16		98.6	5.1	13.6	11.3	13.3	-	Pass
	3				5.9					
	4				5.8					
	2				4.2					

5150-5250 PSD - IC

Mode: HT20 - 4TxBF

Frequency (MHz)	Chain	Software Setting	99% BW (MHz)	Duty Cycle %	PSD dBm/MHz	Total PSD[1] mW/MHz	Total PSD[1] dBm/MHz	dBm/MHz	IC Limit	Result
5180	1	5		98.6	-5.8	1.0	0.0	-	0.3	Pass
	3				-5.7					
	4				-5.8					
	2				-6.2					
5200	1	5		98.6	-5.3	1.0	0.0	-	0.3	Pass
	3				-6.0					
	4				-5.8					
	2				-6.5					
5240	1	5		98.6	-6.2	0.9	-0.5	-	0.3	Pass
	3				-6.4					
	4				-6.0					
	2				-6.6					

Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A

MIMO Device - 5150-5250 MHz Band - FCC

Mode: HT40 - 4TxBF Max EIRP (mW): 1854.4

Frequency (MHz)	Chain	Software Setting	26dB BW (MHz)	Duty Cycle %	Power[1] dBm	Total Power mW	Total Power dBm	FCC Limit dBm	Max Power (W)	Result
5190	1	10		98	12.1	60.0	17.8	26.3	0.199	Pass
	3				11.6					
	4				11.9					
	2				11.4					
5230	1	15		98	17.2	198.7	23.0	26.3		Pass
	3				17.2					
	4				17.0					
	2				16.4					

MIMO Device - 5150-5250 MHz Band - Industry Canada

Mode: HT40 - 4TxBF Max EIRP (mW): 141.3

Frequency (MHz)	Chain	Software Setting	99% BW (MHz)	Duty Cycle %	Power[1] dBm	Total Power dBm	Total Power dBm (eirp)	IC limit dBm (eirp)	Max Power (W)	Result
5190	1	4	36.4	98	6.0	11.7	21.40	23.0	0.015	Pass
	3				5.7					
	4				5.5					
	2				5.6					
5230	1	4	36.4	98	6.1	11.8	21.50	23.0		Pass
	3				5.8					
	4				5.6					
	2				5.5					

Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A

5150-5250 PSD - FCC

Mode: HT40 - 4TxBF

Frequency (MHz)	Chain	Software Setting	99% BW (MHz)	Duty Cycle %	PSD dBm/MHz	Total PSD[1] mW/MHz	Total PSD[1] dBm/MHz	FCC Limit dBm/MHz		Result
5190	1	10		98	-3.7	1.6	2.0	13.3	-	Pass
	3				-3.9					
	4				-3.9					
	2				-4.2					
5230	1	15		98	1.5	5.3	7.2	13.3	-	Pass
	3				1.5					
	4				1.2					
	2				0.6					

5150-5250 PSD - IC

Mode: HT40 - 4TxBF

Frequency (MHz)	Chain	Software Setting	99% BW (MHz)	Duty Cycle %	PSD dBm/MHz	Total PSD[1] mW/MHz	Total PSD[1] dBm/MHz	dBm/MHz	IC Limit dBm/MHz	Result
5190	1	4	36.4	98	-9.9	0.4	-4.0	-	0.3	Pass
	3				-10.1					
	4				-10.4					
	2				-10.2					
5230	1	4	36.4	98	-9.3	0.4	-4.0	-	0.3	Pass
	3				-10.0					
	4				-10.3					
	2				-10.2					

Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A

MIMO Device - 5150-5250 MHz Band - FCC

Mode: AC80 - 4TxBF Max EIRP (mW): 462

Frequency (MHz)	Chain	Software Setting	26dB BW (MHz)	Duty Cycle %	Power[1] dBm	Total Power mW	Total Power dBm	FCC Limit dBm	Max Power (W)	Result
5210	1	9		96	11.3	49.5	16.9	26.3	0.050	Pass
	3				10.3					
	4				10.9					
	2				10.4					

MIMO Device - 5150-5250 MHz Band - Industry Canada

Mode: AC80 - 4TxBF Max EIRP (mW): 195.0

Frequency (MHz)	Chain	Software Setting	99% BW (MHz)	Duty Cycle %	Power[1] dBm	Total Power dBm	Total Power dBm (eirp)	IC limit dBm (eirp)	Max Power (W)	Result
5210	1	5	75.15	96	7.4	13.2	22.90	23.0	0.021	Pass
	3				6.9					
	4				7.0					
	2				6.7					

Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A

5150-5250 PSD - FCC

Mode: AC80 - 4TxBF

Frequency (MHz)	Chain	Software Setting	99% BW (MHz)	Duty Cycle %	PSD dBm/MHz	Total PSD[1] mW/MHz	Total PSD[1] dBm/MHz	FCC Limit dBm/MHz		Result
5210	1	9		96	-7.0	0.7	-1.5	13.3	-	Pass
	3				-7.9					
	4				-7.2					
	2				-7.9					

5150-5250 PSD - IC

Mode: AC80 - 4TxBF

Frequency (MHz)	Chain	Software Setting	99% BW (MHz)	Duty Cycle %	PSD dBm/MHz	Total PSD[1] mW/MHz	Total PSD[1] dBm/MHz		IC Limit dBm/MHz	Result
5210	1	5	75.15	96	-10.9	0.3	-5.2	-	0.3	Pass
	3				-11.3					
	4				-11.1					
	2				-11.3					

Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A

RSS-247 (LELAN) and FCC 15.407(UNII)
Antenna Port Measurements
Power, PSD, Bandwidth and Spurious Emissions

Test Specific Details

Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the specification listed above.

General Test Configuration

When measuring the conducted emissions from the EUT's antenna port, the antenna port of the EUT was connected to the spectrum analyzer or power meter via a suitable attenuator to prevent overloading the measurement system. All measurements are corrected to allow for the external attenuators and cables used.

Ambient Conditions:

Temperature:	20-22 °C
Rel. Humidity:	30-35 %

Modifications Made During Testing

No modifications were made to the EUT during testing

Deviations From The Standard

No deviations were made from the requirements of the standard.

Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A

Summary of Results

Run #	Test Performed	Limit	Pass / Fail	Result / Margin
FCC/IC - 4Tx				
1	Power, 5725 - 5850MHz	15.407(a)(3)	Pass	a: 25.0 dBm (314 mW) HT20: 22.9 dBm (194 mW) HT40: 21.9 dBm (157 mW) AC80: 17.2 dBm (52 mW)
1	PSD, 5725 - 5850MHz	15.407(a)(3)	Pass	a: 12.5 dBm/MHz HT20: 10.1 dBm/MHz HT40: 6.2 dBm/MHz AC80: -1.5 dBm/MHz
1	6dB Bandwidth - UNII3	RSS 247 6.2.4 (1)	Pass	a: 16.3 MHz n20: 17.5 MHz n40: 36.3 MHz ac80: 76.3 MHz
1	99% Bandwidth	RSS 247 (Information only)	N/A	a: 19.1 MHz n20: 18.5 MHz n40: 36.7 MHz ac80: 75.9 MHz
FCC/IC - 4TxBF				
1	Power, 5725 - 5850MHz	15.407(a)(3)	Pass	a: 25.0 dBm (314 mW) HT20: 22.9 dBm (194 mW) HT40: 21.9 dBm (157 mW) AC80: 17.2 dBm (52 mW)
1	PSD, 5725 - 5850MHz	15.407(a)(3)	Pass	a: 12.5 dBm/MHz HT20: 10.1 dBm/MHz HT40: 6.2 dBm/MHz AC80: -1.5 dBm/MHz
1	6dB Bandwidth - UNII3	RSS 247 6.2.4 (1)	Pass	a: 16.3 MHz n20: 17.5 MHz n40: 36.3 MHz ac80: 76.3 MHz
1	99% Bandwidth	RSS 247 (Information only)	N/A	a: 19.1 MHz n20: 18.5 MHz n40: 36.7 MHz ac80: 75.9 MHz

Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A

Procedure Comments:

Measurements performed in accordance with FCC KDB 789033

Mode	Data Rate	Duty Cycle (x)	Constant DC?	T (ms)	Pwr Cor Factor*	Lin Volt Cor Factor**	Min VBW for FS (Hz)
11g/a	6Mb/s	98.3%	Yes	2.09	0.00	0.00	10
HT20	MCS0	98.6%	Yes	1.91	0.00	0.00	10
HT40	MCS0	98.0%	Yes	0.94	0.00	0.00	10
ac80	VHT0	96.0%	Yes	0.46	0.18	0.35	2174

Sample Notes

Sample S/N: BET3715XRU20121
Driver: 10.10 RC69.10

Note 1:	For the transmit duty cycle ≥ 98 percent, output power measured using a spectrum analyzer (see plots below). RBW=1MHz, VB=3 MHz, # of points in sweep ≥ 2*span/RBW, RMS detector, trace average 100 traces, power averaging on and power integration over 99% BW MHz (method SA-1 of KDB 789033).
Note 2:	For the transmit duty cycle ≤ 98 percent, output power measured using a spectrum analyzer (see plots below). RBW=1MHz, VB=3 MHz, # of points in sweep ≥ 2*span/RBW, RMS detector, trace average 100 traces, power averaging on and power integration over 99% bandwidth. The measurements adjusted by adding YY. This is based on 10log(1/x), where x is the duty cycle. (method SA-2 of KDB 789033)
Note 3:	PSD measured using the same analyzer settings used for output power.
Note 5:	For MIMO systems the total output power and total PSD are calculated form the sum of the powers of the individual chains (in linear terms). The antenna gain used to determine the EIRP and limits for PSD/Output power depends on the operating mode of the MIMO device. If the signals on the non-coherent between the transmit chains then the gain used to determine the limits is the highest gain of the individual chains and the EIRP is the sum of the products of gain and power on each chain. If the signals are coherent then the effective antenna gain is the sum (in linear terms) of the gains for each chain and the EIRP is the product of the effective gain and total power.

Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A

Antenna Gain Information - 4Tx

Freq	Antenna Gain (dBi) / Chain				BF	MultiChain Legacy	CDD	Sectorized / Xpol	Dir G (PWR)	Dir G (PSD)
	1	2	3	4						
5725-5850	1.9	6.7	3.6	1.5	No	Yes	Yes	No	3.9	9.9
5250-5350	2.8	8.8	4.7	5.2	No	Yes	Yes	No	6.0	12.0
5470-5725	3.4	6.9	3.3	5.8	No	Yes	Yes	No	5.1	11.1
5725-5850	3.3	4.9	3.8	3.1	No	Yes	Yes	No	3.8	9.8

Antenna Gain Information - 4TxBF

Freq	Antenna Gain (dBi) / Chain				BF	MultiChain Legacy	CDD	Sectorized / Xpol	Dir G (PWR)	Dir G (PSD)
	1	2	3	4						
5150-5250	1.9	6.7	3.6	1.5	Yes	Yes	Yes	No	9.7	9.7
5250-5350	2.8	8.8	4.7	5.2	Yes	Yes	Yes	No	11.7	11.7
5470-5725	3.4	6.9	3.3	5.8	Yes	Yes	Yes	No	11.0	11.0
5725-5850	3.3	4.9	3.8	3.1	Yes	Yes	Yes	No	9.8	9.8

Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A

For devices that support CDD modes

Min # of spatial streams: 1
Max # of spatial streams: 4

Notes:	BF = beamforming mode supported, Multichain Legacy = 802.11 legacy data rates supported for multichain transmissions, CDD = Cyclic Delay Diversity (or Cyclic Shift Diversity) modes supported, Sectorized / Xpol = antennas are sectorized or cross polarized.
Notes:	Dir G (PWR) = total gain (Gant + Array Gain) for power calculations; GA (PSD) = total gain for PSD calculations based on FCC KDB 662911. Depending on the modes supported, the Array Gain value for power could be different from the PSD value.
Notes:	Array gain for power/psd calculated per KDB 662911 D01.
Notes:	For systems with Beamforming and CDD, choose one the following options: Option 1: Delays are optimized for beamforming, rather than being selected from cyclic delay table of 802.11; Array gains calculated based on beamforming criteria. Option 2: Antennas are paired for beamforming, and the pairs are configured to use the cyclic delay diversity of 802.11; the array gain associated with beamforming with 2 antennas (3dB), and the array gain associated with CDD with two antennas (3dB for PSD and 0 dB for power)

Run #1: Bandwidth, Output Power and Power Spectral Density - MIMO Systems

Date of Test: 10/8/2015, 10/9/2015 Config. Used: Conducted
Test Engineer: M. Birgani Config Change: -
Test Location: FT Lab 4 EUT Voltage: POE

MIMO Device - 5725-5850 MHz Band - FCC/IC

Mode: 11a - 4Tx Max EIRP (mW): 752.3

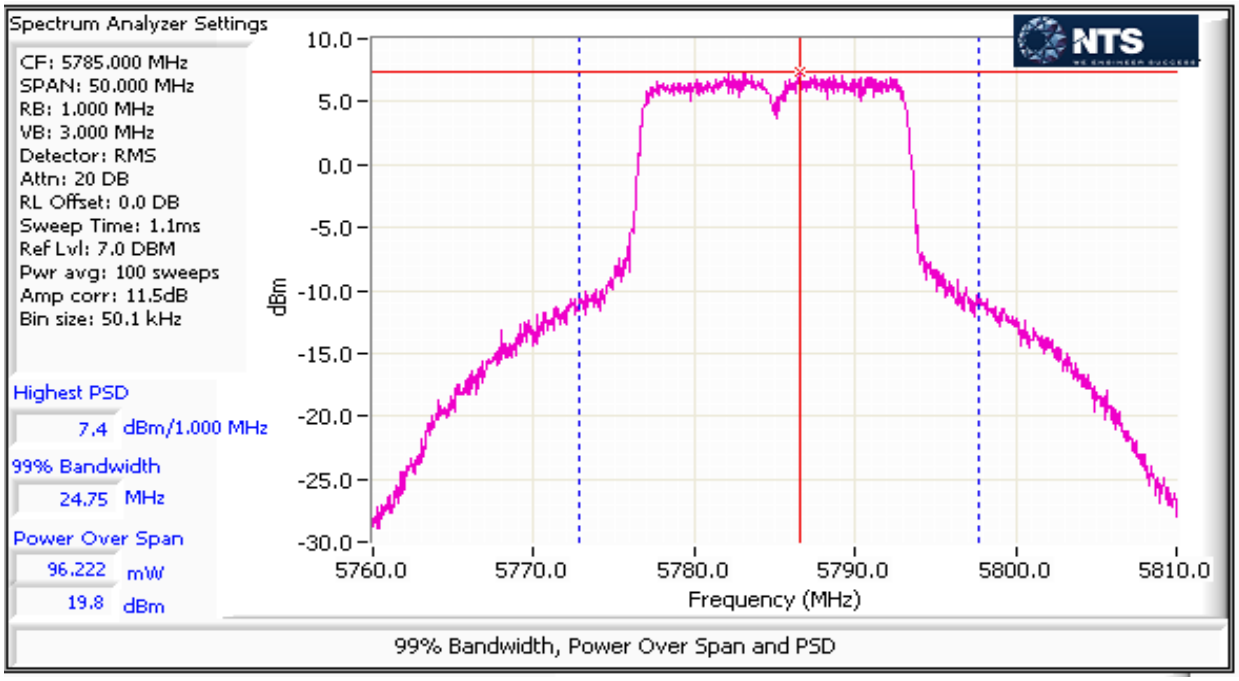
Frequency (MHz)	Chain	Software Setting	26dB BW (MHz)	Duty Cycle %	Power[1] dBm	Total Power mW	Total Power dBm	FCC Limit dBm	Max Power (W)	Result
5745	1	11		98	12.8	99.8	20.0	30.0		Pass
	3				13.6					
	4				14.9					
	2				14.3					
5785	1	16		98	18.2	313.6	25.0	30.0	0.314	Pass
	3				18.5					
	4				19.8					
	2				19.1					
5825	1	14		98	16.1	191.4	22.8	30.0		Pass
	3				16.2					
	4				17.7					
	2				17.0					

Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A

5725-5850 PSD - FCC/IC

Mode: 11a - 4Tx

Frequency (MHz)	Chain	Software Setting	99% BW (MHz)	Duty Cycle %	PSD dBm/MHz	Total PSD[1] mW/MHz	Total PSD[1] dBm/MHz	FCC Limit dBm/500kHz		Result
5745	1	11		98.3	0.3	5.8	7.6	26.2	-	Pass
	3				1.2					
	4				2.6					
	2				2.0					
5785	1	16		98.3	5.7	17.9	12.5	26.2	-	Pass
	3				6.0					
	4				7.4					
	2				6.7					
5825	1	14		98.3	3.8	11.0	10.4	26.2	-	Pass
	3				3.8					
	4				5.1					
	2				4.7					



Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A

MIMO Device - 5725-5850 MHz Band - FCC/IC

Mode: HT20 - 4Tx Max EIRP (mW): 466.3

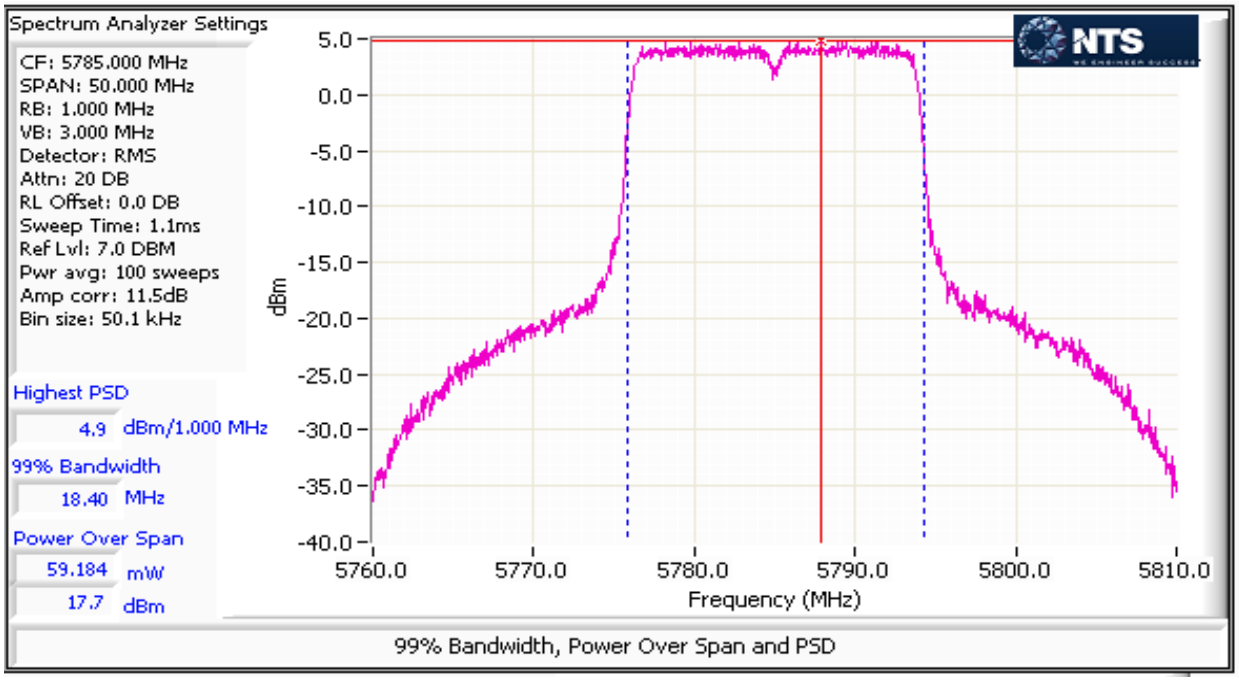
Frequency (MHz)	Chain	Software Setting	26dB BW (MHz)	Duty Cycle %	Power[1] dBm	Total Power mW	Total Power dBm	FCC Limit dBm	Max Power (W)	Result
5745	1	10		98.6	11.7	72.3	18.6	30.0	0.194	Pass
	3				12.1					
	4				13.3					
	2				13.0					
5785	1	14		98.6	16.1	194.4	22.9	30.0		Pass
	3				16.5					
	4				17.7					
	2				17.0					
5825	1	12		98.6	14.1	119.3	20.8	30.0		Pass
	3				14.1					
	4				15.6					
	2				15.0					

Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A

5725-5850 PSD - FCC/IC

Mode: HT20 - 4Tx

Frequency (MHz)	Chain	Software Setting	99% BW (MHz)	Duty Cycle %	PSD dBm/MHz	Total PSD[1] mW/MHz	Total PSD[1] dBm/MHz	FCC Limit dBm/500kHz		Result
5745	1	10		98.6	-1.0	3.9	5.9	26.2	-	Pass
	3				-0.7					
	4				0.6					
	2				0.5					
5785	1	14		98.6	3.4	10.3	10.1	26.2	-	Pass
	3				3.6					
	4				4.9					
	2				4.3					
5825	1	12		98.6	1.4	6.5	8.1	26.2	-	Pass
	3				1.5					
	4				2.9					
	2				2.5					



Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A

MIMO Device - 5725-5850 MHz Band - FCC/IC

Mode: HT40 - 4Tx Max EIRP (mW): 375.4

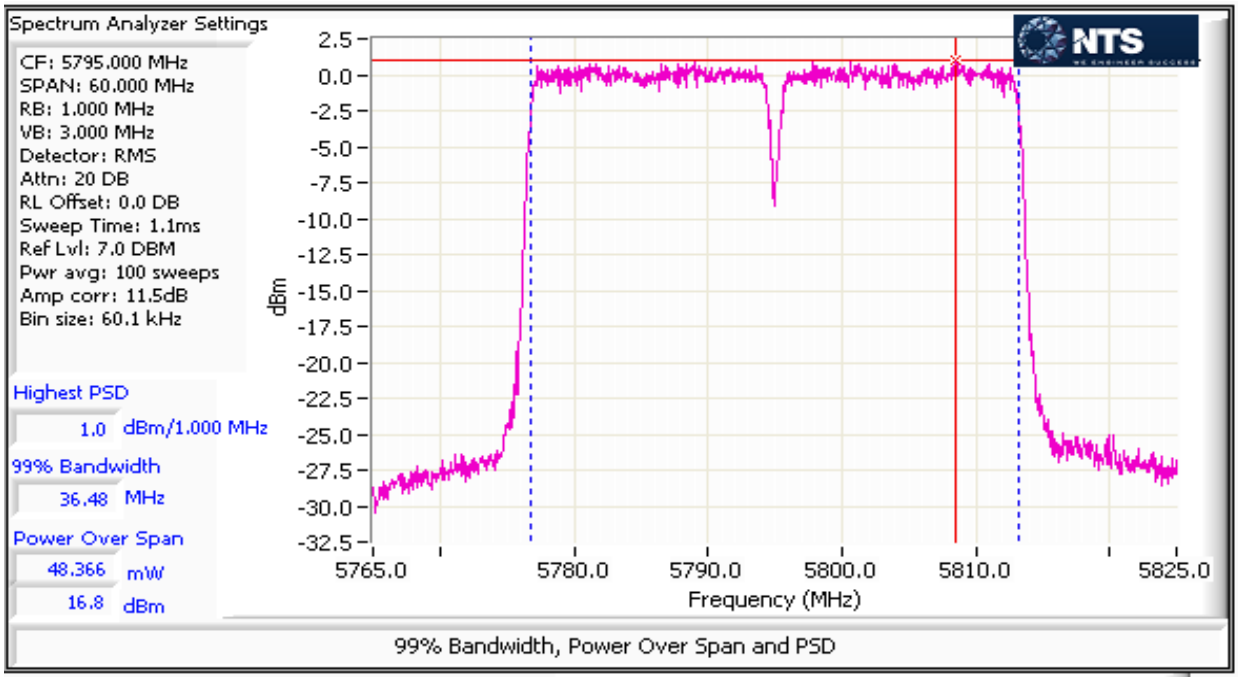
Frequency (MHz)	Chain	Software Setting	26dB BW (MHz)	Duty Cycle %	Power[1] dBm	Total Power mW	Total Power dBm	FCC Limit dBm	Max Power (W)	Result
5755	1	8		98.0	10.3	49.6	17.0	30.0	0.157	Pass
	3				10.2					
	4				12.0					
	2				11.0					
5795	1	13		98.0	15.2	156.5	21.9	30.0		Pass
	3				15.3					
	4				16.8					
	2				16.2					

5725-5850 PSD - FCC/IC

Mode: HT40 - 4Tx

Frequency (MHz)	Chain	Software Setting	99% BW (MHz)	Duty Cycle %	PSD dBm/MHz	Total PSD[1] mW/MHz	Total PSD[1] dBm/MHz	FCC Limit dBm/500kHz		Result
5755	1	8		98.0	-5.2	1.4	1.5	26.2	-	Pass
	3				-5.4					
	4				-3.4					
	2				-4.7					
5795	1	13		98.0	-0.5	4.2	6.2	26.2	-	Pass
	3				-0.3					
	4				1.0					
	2				0.6					

Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A



Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A

MIMO Device - 5725-5850 MHz Band - FCC/IC

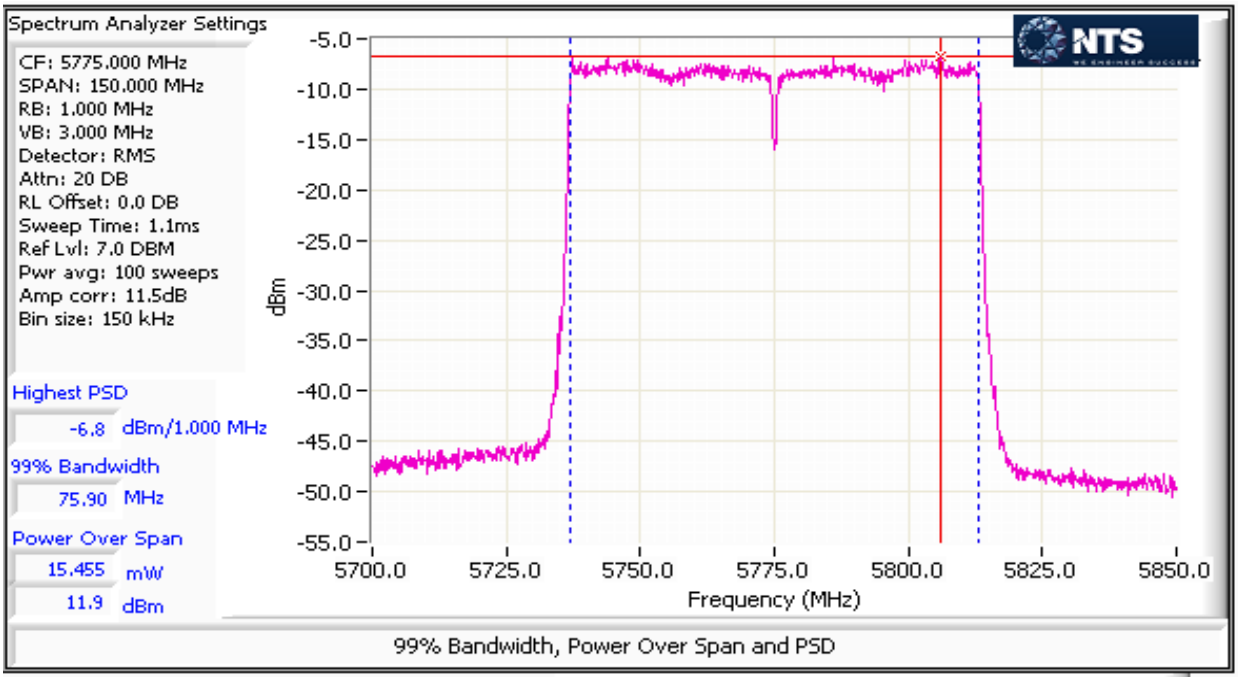
Mode: AC80 - 4Tx Max EIRP (mW): 125

Frequency (MHz)	Chain	Software Setting	26dB BW (MHz)	Duty Cycle %	Power[1] dBm	Total Power mW	Total Power dBm	FCC Limit dBm	Max Power (W)	Result
5775	1	8		96.0	10.4	52.1	17.2	30.0	0.052	Pass
	3				10.4					
	4				11.9					
	2				11.0					

5725-5850 PSD - FCC/IC

Mode: AC80 - 4Tx

Frequency (MHz)	Chain	Software Setting	99% BW (MHz)	Duty Cycle %	PSD dBm/MHz	Total PSD[1] mW/MHz	Total PSD[1] dBm/MHz	FCC Limit dBm/500kHz		Result
5775	1	8		96.0	-8.5	0.7	-1.5	26.2	-	Pass
	3				-8.3					
	4				-6.8					
	2				-7.4					



Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A

MIMO Device - 5725-5850 MHz Band - FCC/IC

Mode: 11a - 4TxBF

Max EIRP (mW): 2994.9

Frequency (MHz)	Chain	Software Setting	26dB BW (MHz)	Duty Cycle %	Power[1] dBm	Total Power mW	Total Power dBm	FCC Limit dBm	Max Power (W)	Result
5745	1	11		98	12.8	99.8	20.0	26.2	0.314	Pass
	3				13.6					
	4				14.9					
	2				14.3					
5785	1	16		98	18.2	313.6	25.0	26.2		Pass
	3				18.5					
	4				19.8					
	2				19.1					
5825	1	14		98	16.1	191.4	22.8	26.2		Pass
	3				16.2					
	4				17.7					
	2				17.0					

5725-5850 PSD - FCC/IC

Mode: 11a - 4TxBF

Frequency (MHz)	Chain	Software Setting	99% BW (MHz)	Duty Cycle %	PSD dBm/MHz	Total PSD[1] mW/MHz	Total PSD[1] dBm/MHz	FCC Limit dBm/500kHz		Result
5745	1	11		98.3	0.3	5.8	7.6	26.2	-	Pass
	3				1.2					
	4				2.6					
	2				2.0					
5785	1	16		98.3	5.7	17.9	12.5	26.2	-	Pass
	3				6.0					
	4				7.4					
	2				6.7					
5825	1	14		98.3	3.8	11.0	10.4	26.2	-	Pass
	3				3.8					
	4				5.1					
	2				4.7					

Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A

MIMO Device - 5725-5850 MHz Band - FCC/IC

Mode: HT20 - 4TxBF

Max EIRP (mW): 1856.5

Frequency (MHz)	Chain	Software Setting	26dB BW (MHz)	Duty Cycle %	Power[1] dBm	Total Power mW	Total Power dBm	FCC Limit dBm	Max Power (W)	Result
5745	1	10	21.8	98.6	11.7	72.3	18.6	26.2	0.194	Pass
	3				12.1					
	4				13.3					
	2				13.0					
5785	1	14	32.4	98.6	16.1	194.4	22.9	26.2		Pass
	3				16.5					
	4				17.7					
	2				17.0					
5825	1	12	21.8	98.6	14.1	119.3	20.8	26.2		Pass
	3				14.1					
	4				15.6					
	2				15.0					

5725-5850 PSD - FCC/IC

Mode: HT20 - 4TxBF

Frequency (MHz)	Chain	Software Setting	99% BW (MHz)	Duty Cycle %	PSD dBm/MHz	Total PSD[1] mW/MHz	Total PSD[1] dBm/MHz	FCC Limit dBm/500kHz		Result
5745	1	10		98.6	-1.0	3.9	5.9	26.2	-	Pass
	3				-0.7					
	4				0.6					
	2				0.5					
5785	1	14		98.6	3.4	10.3	10.1	26.2	-	Pass
	3				3.6					
	4				4.9					
	2				4.3					
5825	1	12		98.6	1.4	6.5	8.1	26.2	-	Pass
	3				1.5					
	4				2.9					
	2				2.5					

Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A

MIMO Device - 5725-5850 MHz Band - FCC/IC

Mode: HT40 - 4TxBF Max EIRP (mW): 1494.6

Frequency (MHz)	Chain	Software Setting	26dB BW (MHz)	Duty Cycle %	Power[1] dBm	Total Power mW	Total Power dBm	FCC Limit dBm	Max Power (W)	Result
5755	1	8		98.0	10.3	49.6	17.0	26.2	0.157	Pass
	3				10.2					
	4				12.0					
	2				11.0					
5795	1	13		98.0	15.2	156.5	21.9	26.2		Pass
	3				15.3					
	4				16.8					
	2				16.2					

5725-5850 PSD - FCC/IC

Mode: HT40 - 4TxBF

Frequency (MHz)	Chain	Software Setting	99% BW (MHz)	Duty Cycle %	PSD dBm/MHz	Total PSD[1] mW/MHz	Total PSD[1] dBm/MHz	FCC Limit dBm/500kHz		Result
5755	1	8		98.0	-5.2	1.4	1.5	26.2	-	Pass
	3				-5.4					
	4				-3.4					
	2				-4.7					
5795	1	13		98.0	-0.5	4.2	6.2	26.2	-	Pass
	3				-0.3					
	4				1.0					
	2				0.6					

MIMO Device - 5725-5850 MHz Band - FCC/IC

Mode: AC80 - 4TxBF Max EIRP (mW): 497.6

Frequency (MHz)	Chain	Software Setting	26dB BW (MHz)	Duty Cycle %	Power[1] dBm	Total Power mW	Total Power dBm	FCC Limit dBm	Max Power (W)	Result
5775	1	8		96.0	10.4	52.1	17.2	26.2	0.052	Pass
	3				10.4					
	4				11.9					
	2				11.0					

Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A

5725-5850 PSD - FCC/IC

Mode: AC80 - 4TxBF

Frequency (MHz)	Chain	Software Setting	99% BW (MHz)	Duty Cycle %	PSD dBm/MHz	Total PSD[1] mW/MHz	Total PSD[1] dBm/MHz	FCC Limit dBm/500kHz		Result
5775	1	8		96.0	-8.5	0.7	-1.5	26.2	-	Pass
	3				-8.3					
	4				-6.8					
	2				-7.4					

Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A

Run #2: Bandwidth Measurements

Date of Test: 10/09/15 | Config. Used: Conducted
Test Engineer: M. Birgani | Config Change: -
Test Location: FT Lab 4 | EUT Voltage: POE

Mode: 11a

5725-5850MHz band (UNII3)

Testing performed on port: 1

Power Setting	Frequency (MHz)	Bandwidth (MHz)		RBW Setting (MHz)	
		6dB	99%	6dB	99%
15	5745	16.3	19.1	100	300
15	5785	16.3	19.1	100	300
15	5825	16.3	18.7	100	300

Note 1: 6dB BW: RBW=100kHz, VBW ≥ 3*RBW, peak detector, max hold, auto sweep time.
99% BW: RBW=1-5% of of 99%BW, VBW ≥ 3*RBW, peak detector, max hold, auto sweep time.

Mode: HT20

5725-5850MHz band (UNII3)

Testing performed on port: 1

Power Setting	Frequency (MHz)	Bandwidth (MHz)		RBW Setting (MHz)	
		6dB	99%	6dB	99%
14	5745	17.6	18.5	100	300
14	5785	17.5	18.3	100	300
14	5825	17.6	18.4	100	300

Note 1: 6dB BW: RBW=100kHz, VBW ≥ 3*RBW, peak detector, max hold, auto sweep time.
99% BW: RBW=1-5% of of 99%BW, VBW ≥ 3*RBW, peak detector, max hold, auto sweep time.

Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A

Mode: **HT40**
5725-5850MHz band (UNII3)
Testing performed on port: 1

Power Setting	Frequency (MHz)	Bandwidth (MHz)		RBW Setting (kHz)	
		6dB	99%	6dB	99%
13	5755	36.3	36.7	100	510
13	5795	36.3	36.7	100	510

Note 1: 6dB BW: RBW=100kHz, VBW ≥ 3*RBW, peak detector, max hold, auto sweep time.
99% BW: RBW=1-5% of of 99%BW, VBW ≥ 3*RBW, peak detector, max hold, auto sweep time.

Mode: **AC80**
5725-5850MHz band (UNII3)
Testing performed on port: 1

Power Setting	Frequency (MHz)	Bandwidth (MHz)		RBW Setting (kHz)	
		6dB	99%	6dB	99%
10	5775	76.3	75.9	100	1000

Note 1: 6dB BW: RBW=100kHz, VBW ≥ 3*RBW, peak detector, max hold, auto sweep time.
99% BW: RBW=1-5% of of 99%BW, VBW ≥ 3*RBW, peak detector, max hold, auto sweep time.

Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A

FCC Part 15
Frequency Stability

Test Specific Details

Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the specification listed above.

General Test Configuration

All measurements are made with the EUT's rf port connected to the measurement instrument via an attenuator. All amplitude measurements are adjusted to account for the attenuation between EUT and measuring instrument. For frequency stability measurements the EUT was placed inside an environmental chamber.

Ambient Conditions:

Temperature: 24 °C

Rel. Humidity: 38 %

Run #			Test Performed	Limit	Pass / Fail	
1			Frequency Stability	Stays in band	Pass	

Modifications Made During Testing

No modifications were made to the EUT during testing

Deviations From The Standard

No deviations were made from the requirements of the standard.

Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99512
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247/15.407, RSS-247	Class:	N/A

Run #1: Frequency Stability

Date of Test: 10/13/2015
Test Engineer: Deniz Demirci
Test Location: FT Lab #4b

Config. Used: 1
Config Change: None
EUT Voltage: 120V/60Hz

Nominal Frequency: 5240 MHz

Frequency Stability Over Temperature

The EUT was soaked at each temperature for a minimum of 30 minutes prior to starting the transmitter and making the measurements to ensure the EUT and chamber had stabilized at that temperature.

Measurement performed on a modulated carrier. Center determined from the -10dBc frequency points, captured using RBW=1MHz, VBW=10kHz, RMS detector, trace averaging.

Temperature	Frequency Measured	Drift	
(Celsius)	(MHz)	(Hz)	(ppm)
-30	5240.060050	60050	11.5
-20	5240.070050	70050	13.4
-10	5240.060050	60050	11.5
0	5240.040050	40050	7.6
10	5240.020050	20050	3.8
20	5240.000000	0	0.0
30	5239.979950	-20050	-3.8
40	5239.959950	-40050	-7.6
50	5239.959950	-40050	-7.6
Worst case:		-40050	-7.6

Frequency Stability Over Input Voltage

Nominal Voltage is 120Vac.

Voltage	Frequency Measured	Drift	
(AC)	(MHz)	(Hz)	(ppm)
102.00	5240.000000	0	0.0
138.00	5240.000000	0	0.0
Worst case:		0	0.0

Client:	Xirrus	Job Number:	JD99498
Product	XI-AC3470	T-Log Number:	T99598
System Configuration:	-	Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Emissions Standard(s):	FCC 15.247, RSS-247	Class:	-
Immunity Standard(s):	-	Environment:	-

EMC Test Data

For The

Xirrus

Product

XI-AC3470

Date of Last Test: 10/19/2015

Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99598
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247, RSS-247	Class:	-

Conducted Emissions

(NTS Silicon Valley, Fremont Facility, Semi-Anechoic Chamber)

Test Specific Details

Objective: The objective of this test session is to perform final qualification testing of the EUT with respect to the specification listed above.

Date of Test: 10/19/2015
Test Engineer: John Caizzi
Test Location: Fremont Chamber #5

Config. Used: 1
Config Change: none
EUT Voltage: PoE

General Test Configuration

For tabletop equipment, the EUT host system was located on a wooden table inside the semi-anechoic chamber, 40 cm from a vertical coupling plane and 80cm from the LISN. Remote support equipment was located outside of the semi-anechoic chamber. Any cables running to remote support equipment were routed through metal conduit and passed through a ferrite clamp upon exiting the chamber.

Ambient Conditions:

Temperature: 24 °C
Rel. Humidity: 33 %

Summary of Results

Run #	Test Performed	Limit	Result	Margin
2	CE, AC Power,120V/60Hz	Class B	Pass	58.3 dBµV @ 0.285 MHz (-2.4 dB)

Modifications Made During Testing

No modifications were made to the EUT during testing

Deviations From The Standard

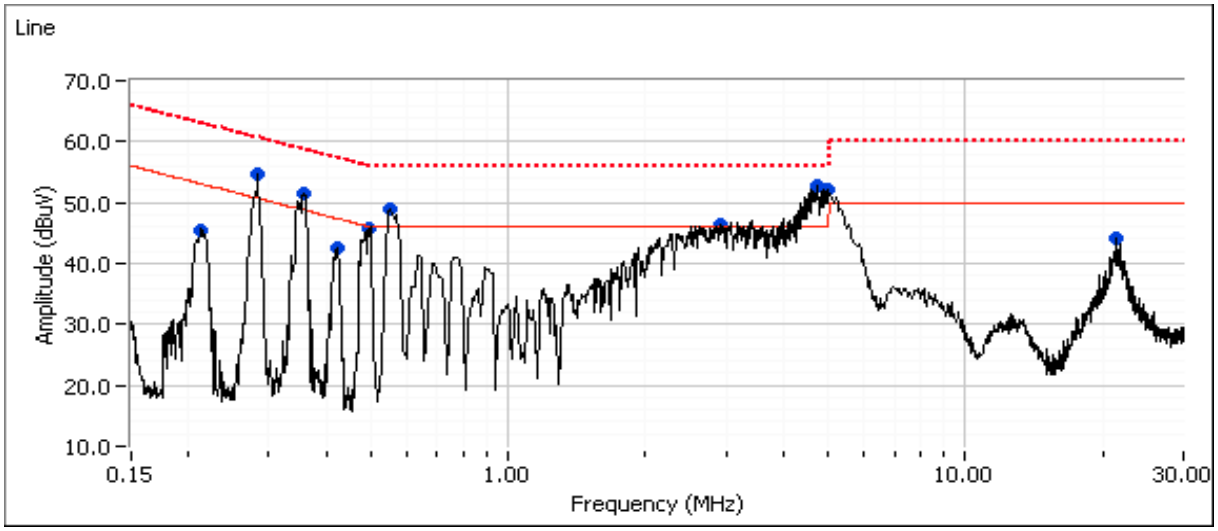
No deviations were made from the requirements of the standard.

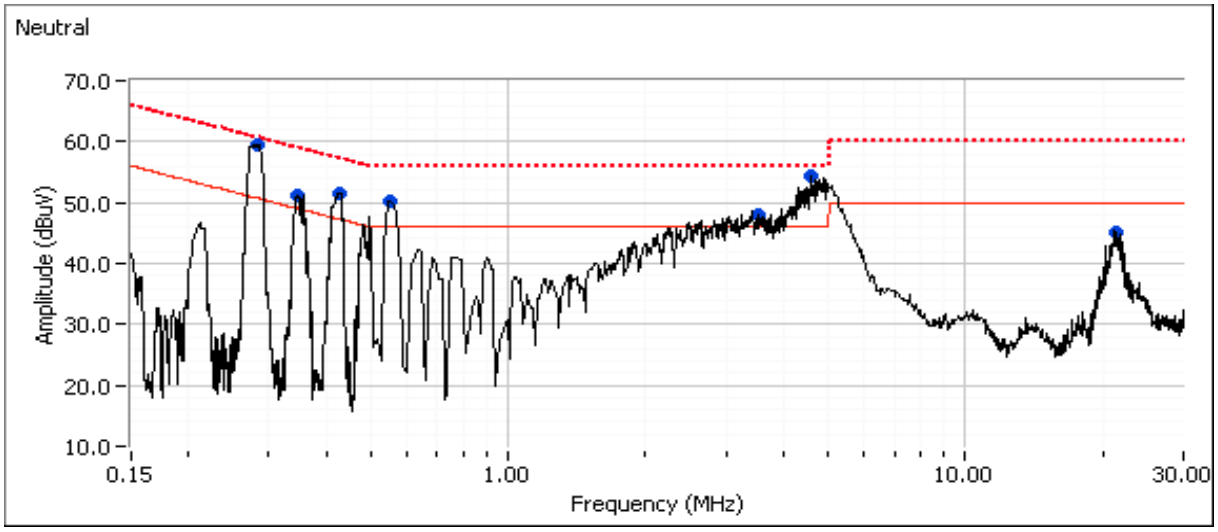
Notes

EUT was configured to continuously transmit on channel 6, 802.11b, 1Mb/s, power setting 19

Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99598
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247, RSS-247	Class:	-

Run #2: AC Power Port Conducted Emissions, 0.15 - 30MHz, 120V/60Hz





Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99598
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247, RSS-247	Class:	-

Preliminary peak readings captured during pre-scan (peak readings vs. average limit)

Frequency	Level	AC	Class B		Detector	Comments
MHz	dBµV	Line	Limit	Margin	QP/Ave	
4.738	52.7	Line	46.0	6.7	Peak	
4.960	52.0	Line	46.0	6.0	Peak	
0.285	54.7	Line	50.7	4.0	Peak	
0.551	48.8	Line	46.0	2.8	Peak	
0.355	51.6	Line	48.8	2.8	Peak	
2.906	46.5	Line	46.0	0.5	Peak	
0.497	45.7	Line	46.1	-0.4	Peak	
0.427	42.4	Line	47.4	-5.0	Peak	
21.360	44.3	Line	50.0	-5.7	Peak	
0.211	45.5	Line	53.1	-7.6	Peak	
0.285	59.6	Neutral	50.7	8.9	Peak	
4.593	54.3	Neutral	46.0	8.3	Peak	
0.426	51.6	Neutral	47.3	4.3	Peak	
0.573	50.1	Neutral	46.0	4.1	Peak	
0.350	51.2	Neutral	49.0	2.2	Peak	
3.489	48.1	Neutral	46.0	2.1	Peak	
0.494	48.0	Neutral	46.0	2.0	Peak	
21.358	45.2	Neutral	50.0	-4.8	Peak	

Client:	Xirrus	Job Number:	JD99498
Model:	XI-AC3470	T-Log Number:	T99598
		Project Manager:	Christine Krebill
Contact:	Paul Zahra	Project Coordinator:	-
Standard:	FCC 15.247, RSS-247	Class:	-

Final quasi-peak and average readings

Frequency	Level	AC	Class B		Detector	Comments
MHz	dBµV	Line	Limit	Margin	QP/Ave	
4.773	32.5	Line	46.0	-13.5	AVG	
4.773	47.5	Line	56.0	-8.5	QP	
4.960	32.6	Line	46.0	-13.4	AVG	
4.960	47.6	Line	56.0	-8.4	QP	
0.285	42.5	Line	50.7	-8.2	AVG	
0.285	58.3	Line	60.7	**-2.4**	QP	
0.551	32.6	Line	46.0	-13.4	AVG	
0.551	48.4	Line	56.0	-7.6	QP	
0.355	33.6	Line	48.8	-15.2	AVG	
0.355	50.6	Line	58.8	-8.2	QP	
2.906	25.7	Line	46.0	-20.3	AVG	
2.906	42.1	Line	56.0	-13.9	QP	
0.497	26.5	Line	46.0	-19.5	AVG	
0.497	45.0	Line	56.0	-11.0	QP	
0.427	31.1	Line	47.3	-16.2	AVG	
0.427	49.0	Line	57.3	-8.3	QP	
21.360	32.0	Line	50.0	-18.0	AVG	
21.360	37.3	Line	60.0	-22.7	QP	
0.211	35.3	Line	53.2	-17.9	AVG	
0.211	44.0	Line	63.2	-19.2	QP	
0.285	38.5	Neutral	50.7	-12.2	AVG	
0.285	56.5	Neutral	60.7	-4.2	QP	
4.593	32.4	Neutral	46.0	-13.6	AVG	
4.593	47.6	Neutral	56.0	-8.4	QP	
0.426	29.0	Neutral	47.3	-18.3	AVG	
0.426	49.1	Neutral	57.3	-8.2	QP	
0.573	16.0	Neutral	46.0	-30.0	AVG	
0.573	38.2	Neutral	56.0	-17.8	QP	
0.350	36.0	Neutral	49.0	-13.0	AVG	
0.350	50.5	Neutral	59.0	-8.5	QP	
3.489	28.9	Neutral	46.0	-17.1	AVG	
3.489	42.8	Neutral	56.0	-13.2	QP	
0.494	29.0	Neutral	46.1	-17.1	AVG	
0.494	46.5	Neutral	56.1	-9.6	QP	
21.358	35.9	Neutral	50.0	-14.1	AVG	
21.358	40.5	Neutral	60.0	-19.5	QP	

End of Report

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